<u>पढ़ें और सीखें योजना</u>

मध्यकालीन भारतीय गणित

की

ऐतिहासिक व सांस्कृतिक झलकियाँ

राधाचरण गुप्त

विभागीय सहयोग
राम दुलार शुक्ल

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
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प्रकाशन प्रभाग में सचिव, राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद, श्री अरविंद मार्ग, नई दिल्ली 110 016 द्वारा प्रकाशित तथा नीरू आर्ट प्रिंटर्स, 10/1, डी. एल. एफ. इण्डस्ट्रियल एरिया, मोती नगर, नई दिल्ली 110 015 द्वारा मुद्रित।

प्राक्कथन

शिक्षा का मुख्य उद्देश्य मनुष्य को बेहतर इंसान बनाना है। शिक्षा मनुष्य का शारीरिक, मानसिक, भावनात्मक व नैतिक दिशा में विकास करके उसे एक सम्पूर्णता प्रदान करती है। हमारी शिक्षा-व्यवस्था में ऐसा तभी संभव हो पाएगा जब बच्चों में पूर्व-प्राथमिक व प्राथमिक स्तर से ही ऐसे मूल्यों की पौध लगाई जाए कि वे बौद्धिक और काल्पनिक क्षमताओं का विकास करना सीखने लगें।

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद् बच्चों में अध्ययन की क्षमता व रुचि दोनों का ही विकास करने के लिए सदा तत्पर रही है और समय-समय पर इस क्षेत्र में विभिन्न प्रयास व नए-नए प्रयोग करती रहती है। पाठ्यक्रम में निर्धारित पुस्तकों के प्रकाशन से भिन्न परिषद् ने बच्चों में अध्ययन प्रवृत्ति के विकास के लिए समय-समय पर पूरक अध्ययन सामग्री तथा उसके अंतर्गत प्रयोगात्मक स्तर पर कई पुस्तक-मालाएँ व परियोजनाएँ शुरू की हैं। इन सभी प्रयासों का मूल उद्देश्य है बच्चों का पुस्तकों से परिचय करना।

पूरक अध्ययन सामग्री के प्रकाशन को इस विचार से जन्म दिया गया है कि बच्चों को पाठ्यपुस्तकों की एकरसता से इतर कुछ ऐसी अध्ययन सामग्री भी दी जानी चाहिए जो कथ्य और कलेवर दोनों ही पक्षों में समृद्ध हो। साथ ही परोक्ष रूप से उन तक वांछित मानवीय मूल्य भी पहुँचाती हो।

लगभग 35 वर्ष से पूरक अध्ययन की पुस्तकों के प्रकाशन का काम जारी रखते हुए परिषद् में इस क्षेत्र में कुछ और अधिक करने की ललक थी और इसी का परिणाम है हमारी पढ़ें और सीखें योजना। इसके अंतर्गत प्रकाशित पुस्तकों के माध्यम से यह कोशिश की गई है कि बच्चे इस दुनिया में बसी हुई अनजान दुनिया से भी परिचित हों तथा

उन्हें अपने भीतर के संसार को जानने का भी मौका मिले। उनमें पुस्तकों के प्रति अपनापन व लगाव उपजे।

इन पुस्तकों में कथा साहित्य, भारतीय संस्कृति और इतिहास, विभिन्न महापुरुषों की जीवनियों व आत्मकथाओं आदि से लेकर विज्ञान के क्षेत्र में हो रहे आधुनिकतम आविष्कारों व विकासकारी गतिविधियों तथा जनसंख्या शिक्षा तक का फैलाव समेटा गया है। पुस्तकों के माध्यम से अपने बाल व किशोर पाठकों को परिषद् सामाजिक जागरूकता, धर्म-निरपेक्षता और वैज्ञानिक मानवतावाद सरीखे मूल्य भी दे रही है।

पढ़ें और सीखें पुस्तक-माला के अंतर्गत पाठ्यक्रम की पुस्तकों से कुछ हटकर तैयार की जाने वाली विज्ञान की पुस्तकों का उद्देश्य है पाठकों को वैज्ञानिक विषयों की सही जानकारी देना तथा उनमें वैज्ञानिक अभिरुचि का विकास करना। आशा है प्रो. राधाचरण गुप्त द्वारा लिखित प्रस्तुत पुस्तक **मध्यकालीन भारतीय गणित की ऐतिहासिक व सांस्कृतिक झलकियाँ** हमारे पाठकों के लिए आनंदप्रद व उपयोगी सिद्ध होगी।

पढ़ें और सीखें पुस्तक-माला के अंतर्गत प्रकाशित पुस्तकों को और भी उपयोगी बनाने की दिशा में दिए गए हर सुझाव का परिषद् स्वागत करेगी।

अशोक कुमार शर्मा
निदेशक
राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्

नई दिल्ली

आमुख

पढ़ें और सीखें योजना के अंतर्गत अब तक काफी पुस्तकें प्रकाशित की जा चुकी हैं। इस योजना के अंतर्गत विज्ञान के विभिन्न क्षेत्रों जैसे भौतिकी, रसायन, गणित, पर्यावरण, अंतरिक्ष एवं ब्रह्मांड विज्ञान, नाभिकीय एवं सौर ऊर्जा, आयुर्विज्ञान, समुद्र विज्ञान, राकेटरी, कम्प्यूटर, बायोटेक्नालॉजी, इंजीनियरिंग आदि में पुस्तकों का निर्माण हुआ है। विज्ञान के अन्य बहुत से नए क्षेत्रों में पुस्तकों का लिखना जारी है। विज्ञान के क्षेत्र में तैयार की जाने वाली इन पुस्तकों के लेखन में हमारे देश के जाने माने वैज्ञानिक सक्रिय योग दे रहे हैं और वे अपनी वैज्ञानिक अनुभूतियों को सरल एवं सुरुचिपूर्ण भाषा में बच्चों के लिए प्रस्तुत कर रहे हैं। देश के इन लब्धप्रतिष्ठ वैज्ञानिकों को योजना में सम्मिलित करने का मुख्य उद्देश्य यह है कि इन पुस्तकों में लिखी गई विषयवस्तु प्रामाणिक होगी तथा हमारे बच्चे यह महसूस करेंगे कि देश के जाने माने वैज्ञानिक उनके लिए उनके स्तर पर उतरकर विज्ञान के गूढ़तम रहस्यों को सुंदर एवं सरल भाषा में प्रस्तुत करने के लिए कृत संकल्प हैं। इससे बच्चों को, जो हमारे भावी वैज्ञानिक हैं, विज्ञान के क्षेत्र में बहुत अधिक प्रोत्साहन मिलेगा। विज्ञान की इन पुस्तकों के द्वारा हमें पूर्ण आशा है कि बच्चों को आधुनिकतम वैज्ञानिक विषयों की सही जानकारी मिलेगी, साथ ही उनके अंदर एक वैज्ञानिक मानसिकता भी पैदा होगी।

प्रस्तुत पुस्तक **मध्यकालीन भारतीय गणित की ऐतिहासिक व सांस्कृतिक झलकियाँ** के लेखन के लिए प्रो. राधाचरण गुप्त ने हमारा निमंत्रण स्वीकार किया जिसके लिए हम उनके अत्यन्त आभारी हैं। इस योजना के अंतर्गत तैयार हो रही विज्ञान की पुस्तकों के लेखन का मार्गदर्शन दिल्ली विश्वविद्यालय के भूतपूर्व कुलपति प्रो. रामचरण मेहरोत्रा कर

रहे हैं। विज्ञान की पुस्तकों के लेखन के संयोजन एवं अंतिम संपादन आदि का दायित्व विज्ञान एवं गणित शिक्षा विभाग के अध्यक्ष प्रो. राम दुलार शुक्ल वहन कर है।

मैं प्रो. रामचरण मेहरोत्रा और अपने सहयोगी प्रो. शुक्ल को हार्दिक धन्यवाद एवं बधाई देता हूँ।

इस पुस्तक को इतने अच्छे ढंग से प्रकाशित करने के लिए मैं परिषद् के प्रकाशन प्रभाग के कार्यकर्ताओं, विशेषकर विभागाध्यक्ष श्री आर. एस. सक्सेना को हार्दिक धन्यवाद देता हूँ।

इस माला की पुस्तकों पर बच्चों, अध्यापकों एवं बच्चों के माता-पिता की प्रतिक्रिया का हम स्वागत करेंगे ताकि इन पुस्तकों को और भी अधिक उपयोगी बनाने में हमें सहयोग मिल सके।

अमर नाथ महेश्वरी

संयुक्त निदेशक

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्

दो शब्द

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद् (एन.सी.ई.आर.टी) की **पढ़ें और सीखें** योजना के अंतर्गत यह एक छोटा-सा प्रयास है। जब परिषद् के प्रगतिशील निदेशक डॉ. अशोक कुमार शर्मा ने मुझे इस दिशा में विज्ञान के विषयों का कार्यभार संभालने के लिए आमंत्रित किया तो अपने वैज्ञानिक मित्रों की अतिव्यस्तता के कारण यह उत्तरदायित्व स्वीकार करने में मुझे संकोच था।

इस दिशा में मेरा प्रयास रहा है कि विज्ञान के विभिन्न विषयों के जाने-माने विद्वानों को इस सराहनीय कार्य के लिए निमंत्रित कर सकूँ। ऐसा मेरा विश्वास है कि खोज और अनुसंधान की आनंदपूर्ण अनुभूतियों वाले वैज्ञानिक ही अपने आनंद की एक झलक बच्चों तक पहुँचा सकते हैं। मैं उनका हृदय से आभारी हूँ कि उन्होंने अंकुरित होने वाली पीढ़ी के लिए अपने बहुमूल्य समय में से कुछ क्षण निकालने का प्रयास किया। बालक राष्ट्र की सबसे बहुमूल्य और महत्वपूर्ण निधि है और मेरे लिए यह किंचित आश्चर्य और संतोष की बात है कि हमारे इतने लब्धप्रतिष्ठ और अत्यंत व्यस्त वैज्ञानिक बच्चों के लिए थोड़ा परिश्रम करने के लिए सहर्ष मान गए हैं। मैं सभी वैज्ञानिक मित्रों के लिए हृदय से आभारी हूँ।

इन पुस्तकों की तैयारी में हमारा मुख्य ध्येय रहा है कि विषय ऐसी शैली में प्रस्तुत किया जाए कि बच्चे स्वयं इसकी ओर आकर्षित हों, साथ ही भाषा इतनी सरल हो कि बच्चों को इनके अध्ययन से विज्ञान के गूढ़तम रहस्यों को समझने में कोई कठिनाई न हो। इन पुस्तकों के पढ़ने से उनमें अधिक पढ़ने की रुचि पैदा हो, उनके नैसर्गिक कौतूहल में वृद्धि हो जिससे ऐसे कौतूहल और उसके समाधान के लिए स्वप्रयत्न उनके जीवन का

एक अंग बन जाए।

यह योजना परिषद् के वर्तमान निदेशक डॉ. अशोक कुमार शर्मा की प्रेरणा से चल रही है। मैं उन्हें इसके लिए बधाई और धन्यवाद देता हूँ।

प्रो. राधाचरण गुप्त ने इस पुस्तक को लिखने के लिए मेरा अनुरोध स्वीकार किया जिसके लिए मैं हृदय से आभारी हूँ। परिषद् के विज्ञान एवं गणित शिक्षा विभाग के अध्यक्ष प्रो. राम दुलार शुक्ल विज्ञान की पुस्तकों के लेखन से संबंधित योजना के संयोजक एवं संपादक हैं और बहुत परिश्रम और कुशलता से अपना कार्य कर रहे हैं। प्रो. अमरनाथ महेश्वरी पढ़ें और सीखें योजना के संचालक हैं। मैं इन दोनों को हृदय से धन्यवाद देता हूँ।

आशा है कि ऐसी पुस्तकों से हमारी नई पीढ़ी की बाल्यकाल ही में वैज्ञानिक मानसिकता का शुभारंभ हो सकेगा और विज्ञान के नवीनतम ज्ञान के साथ ही साथ उन्हें अपने देश की प्रगतियों एवं वैज्ञानिकों के कार्य की झलक मिल सकेगी जिससे उनमें अपने राष्ट्र के प्रति गौरव की भावना का भी सृजन होगा।

रामचरण मेहरोत्रा

अध्यक्ष

पढ़ें और सीखें योजना

(विज्ञान)

प्रो० राधाचरण गुप्त का परिचय

सन् 1935 में जन्मे श्री राधाचरण गुप्त ने लखनऊ विश्वविद्यालय से दो स्वर्ण पदक प्राप्त किये जिनमें से एक एम.एससी. (1957) में प्रथम स्थान पाने के कारण और दूसरा खेलकूद में दक्षता के कारण। सन् 1971 में राँची विश्वविद्यालय से गणित के इतिहास में पीएच. डी. प्राप्त करने के बाद इसी क्षेत्र में विस्तृत शोध का कार्य करते रहे। सन् 1972 में डॉ. गुप्त गणित के इतिहास सम्बन्धी अन्तर्राष्ट्रीय आयोग में भारतीय प्रतिनिधि नियुक्त हुए।

सन् 1979 से प्रो. गुप्त **गणित भारती** (ISSN 0970-0307) नाम की पत्रिका का सफल सम्पादन कर रहे हैं। इन्होंने भारतीय गणित पर लगभग 400 लेख प्रकाशित करके उसका देश-विदेश में प्रचार और प्रसार किया। सन् 1995 में प्रो. गुप्त को अन्तर्राष्ट्रीय अकादमी ऑफ वैज्ञानिकी-इतिहास का सदस्य चुना गया और 1996 में भारतीय विज्ञान परिषद् ने उनको **डिस्टिंग्विस्ड सर्विस अवार्ड** से सम्मानित किया।

गांधी जी का जन्तर

तुम्हें एक जन्तर देता हूं। जब भी तुम्हें सन्देह हो या तुम्हारा अहम् तुम पर हावी होने लगे, तो यह कसौटी आजमाओ :

जो सबसे गरीब और कमजोर आदमी तुमने देखा हो, उसकी शकल याद करो और अपने दिल से पूछो कि जो कदम उठाने का तुम विचार कर रहे हो, वह उस आदमी के लिए कितना उपयोगी होगा। क्या उससे उसे कुछ लाभ पहुंचेगा ? क्या उससे वह अपने ही जीवन और भाग्य पर कुछ काबू रख सकेगा ? यानि क्या उससे उन करोड़ों लोगों को स्वराज्य मिल सकेगा जिनके पेट भूखे हैं और आत्मा अतृप्त है ?

तब तुम देखोगे कि तुम्हारा सन्देह मिट रहा है और अहम् समाप्त होता जा रहा है।



विषय-सूची

अध्याय 1

गलती बताओ तो ज्ञानी कहलाओ

बात है इस शताब्दी के प्रारम्भ की और स्थान–सुदूर दक्षिण भारत के एक विद्यालय का प्रांगण। दृश्य है एक कक्षा का जिसमें गणित के अध्यापक कुछ किशोर विद्यार्थियों को भाग की विधि समझा रहे हैं। अध्यापक ने बताया–

"यदि चार आमों को चार बालकों में बाँटा जाए तो प्रत्येक को एक आम मिलेगा।"

"यदि दस आमों को दस व्यक्तियों में विभाजित किया जाए तो प्रत्येक को एक आम मिलेगा।"

"इसलिए", वह आगे समझाते हुए बोले, "यदि किसी संख्या का उसी संख्या से भाग किया जाए तो भागफल हमेशा एक होता है।"

कक्षा में एक मेधावी छात्र भी था जो इस कथन का दोष समझता था। वह तुरंत खड़ा हो गया और पूछने लगा–

"महोदय, यदि शून्य आमों को शून्य व्यक्तियों में विभाजित किया जाए तो क्या प्रत्येक को एक आम मिलेगा।"

इस असाधारण प्रश्न को सुनते ही अध्यापक मन में कुछ विचलित से हुए और उनको लगा कि निष्कंटक पढ़ाने में कुछ रोड़ा अटक गया। इसलिए विद्यार्थी की भर्त्सना करते

हुए डाँटकर बोले–

"निर्बुद्धि प्रश्न मत करो। शून्य का कोई मान (value) नहीं होता, अतः शून्य फलों के विभाजन की बात सम्भव नहीं है।"

लेकिन विद्यार्थी चुप नहीं रहा, बल्कि आत्मविश्वास भरे शब्दों में गम्भीरतापूर्वक बोला–

"महोदय, शून्य का मान होता है क्योंकि, यदि 2 के दाईं ओर हम एक शून्य रख दें तो 20 हो जाता है, और जब हम दो शून्य रखते हैं तो 200 हो जाता है, इत्यादि।"

"अतः आप" उसने जोर देकर कहा "यह नहीं कह सकते कि शून्य का कोई मान नहीं होता।"

अध्यापक के पास कोई उत्तर न था। अतः संवाद वहीं रुक गया, और छात्र बैठ गया।

यह घटना हुई थी कुंभकोणम के टाउन हाई स्कूल में, और वह मेधावी छात्र था श्रीनिवास रामानुजन। बाद में उसने अपने गणितीय चमत्कारों से दुनिया को आश्चर्यचकित किया और आधुनिक युग के भारत का सर्वश्रेष्ठ गणितज्ञ कहलाने का श्रेय पाया।

वह अध्यापक कौन था, इसे जानने की कोई जरूरत नहीं है। लेकिन उनका कथन, कि–

$$\frac{N}{N}=1 \qquad \text{(A)}$$

सदैव सही नहीं है जबतक N परिमित लेकिन शून्य से भिन्न संख्या न हो। गणित में जो वास्तविक संख्याएँ हैं उनमें शून्य भी सम्मिलित है। सच पूछो तो शून्य एक महत्वपूर्ण संख्या है जिसके अनेक विचित्र गुण होते हैं। इनमें से एक विशेष गुण यह है कि $\frac{0}{0}$ का मान अनिर्धारित या अनिर्णीत (indeterminate) है। उसका सीमान्त मान (limiting value) कुछ भी हो सकता है।

$\frac{0}{0}$ का मान निर्धारित क्यों नहीं है, इसको समझने का एक सरल उपाय हम बताते हैं। इसके लिए हम पूर्णांकों का पूरा-पूरा चले जाने वाला भाग, अर्थात्

$$\frac{p}{q} = n \qquad (B)$$

को बांटने के साधारण अर्थ में लेते हैं। उदाहरण के लिए एक टोकरी में रखे आमों को एक पंक्ति में खड़े तमाम छात्रों में बाँटना है। मान लो, टोकरी में 24 आम हैं, और प्रत्येक को 2 आम के हिसाब से बाँटने का कार्य एक तरफ शुरू किया गया।

जी हाँ, आप जरा ध्यान से देखिए कि क्या हो रहा है, और बांटने वाला अपना काम ठीक से कर रहा है या नहीं। बाँटने वाला टोकरी में से 2 आम निकालकर तुरंत पंचित में खड़े पहले छात्र के थैले में डाल देता है। इसी प्रकार प्रत्येक बार 2 आम निकालकर क्रमशः दूसरे, तीसरे, चौथे इत्यादि छात्रों के थैलों में डालता हुआ आगे बढ़ता जाता है।

यह सिलसिला पंक्ति के 12 वें छात्र तक जारी रहता है। इसके बाद बाँटने वाला पाता है कि टोकरी में अब कोई आम नहीं बचा। अर्थात् टोकरी में आमों की संख्या शून्य है। अतः बाँटने का काम बंद हो गया।

नतीजा क्या निकला। यही कि जब 24 आमों को 2 आम प्रति छात्र के हिसाब से बाटें तो 12 छात्रों को आम मिलेंगे। यदि आम की जगह संतरे और छात्रों के स्थान पर चपरासी होते तो भी परिणाम वैसा ही होता। गणितीय भाषा में इसी बात को हम कहेंगे *कि यदि 24 में 2 का भाग दिया जाए तो नतीजा यानी भागफल 12 आएगा। अर्थात्*

$$\frac{24}{2} = 12$$

इस गणितीय समीकरण के आधार पर हम कहते हैं कि $\frac{24}{2}$ का मान या मूल्य (Value) 12 है।

ऊपर के उदाहरण से स्पष्ट है कि $\frac{24}{2}$ का मान निकालने के लिए हम आमों के वितरण का सहारा ले सकते हैं। यानी हम 24 आम लें और उनको 2 आम प्रति लड़के के हिसाब से तब तक बाटें जब तक शेष शून्य न हो जाए।

जितने छात्रों को आम मिले, उनकी संख्या (यहाँ 12) ही $\frac{24}{2}$ का मान होगा।

कुछ मजेदार परिणाम निकालने के पहले इस विधि की समझ को पक्का करेंगे जिसके लिए एक उदाहरण और लेते हैं । वह है 18/3 का मान निकालना।

ऊपर की विधि के अनुसार हम 18 आम लेते हैं और प्रति छात्र 3 के हिसाब से बाँटना शुरू करते हैं। हम पाएँगे कि छठे छात्र को आम देने के बाद शेष शून्य हो जाएगा। जिसके साथ भाग देने की क्रिया भी समाप्त हो जाएगी। चूंकि आम पाने वालों की संख्या 6 है, इसलिए, 18/3 का मान 6 हुआ।

आशा है कि तुम इस विधि से सरल स्थिति में $\frac{p}{q}$ का मान निकालना सीख गए होगे।

कुछ अन्य बातें भी आसानी से समझ में आ जायेंगी। यदि p स्थिर हो, तो जैसे-जैसे q छोटा होगा, $\frac{p}{q}$ का मान बढ़ेगा। जैसे-

$$\frac{600}{50} = 12;$$
$$\frac{600}{30} = 20;$$
$$\frac{600}{10} = 60;$$
$$\frac{600}{3} = 200,$$

इत्यादि

और यदि q स्थिर हो तो $\frac{p}{q}$ का मान p के कम ज्यादा होने के साथ कम ज्यादा हो जाएगा। जैसे-

$$\frac{2400}{30} = 80;$$

$\frac{1200}{30} = 40;$

$\frac{900}{30} = 30;$

$\frac{600}{30} = 20;$

$\frac{300}{30} = 10,$ इत्यादि

$\frac{p}{q}$ के मान का इस तरह घटने–बढ़ने के स्वभाव को आम वितरण की विधि से आसानी से समझा जा सकता है।

इस प्रकार यदि तुम $\frac{p}{q}$ के मान को अच्छी तरह समझ गए हो तो निम्नलिखित तीन उदाहरणों में प्रत्येक का मान क्या होगा, सोचकर निकालो।

उदाहरण	उत्तर
(a) 0/2	शून्य
(b) 3/0	अनन्त
(c) 0/0	अनिर्णीत

पहले उदाहरण (a) में आमों की संख्या शून्य यानी टोकरी खाली होने के कारण पहले छात्र को भी इच्छित 2 या कोई आम नहीं दिया जा सकता। वास्तव में टोकरी में आमों की संख्या प्रारंभ में ही शून्य है। यानी शेष शुरू में ही शून्य होगा और उसी के साथ प्रारंभ में ही भाग की क्रिया समाप्त समझी जा सकती है। इसलिए आम पाने वाले छात्रों की संख्या शून्य है। अतः

$0/2 = 0$

दूसरा उदाहरण (b) मजेदार है। टोकरी में 3 आम हैं। लेकिन प्रति छात्र 0 आम ही देना है। केवल दिखावे के लिए बाँटने वाला अपना हाथ प्रत्येक बार टोकरी में डालता है, खाली मुट्ठी बंद करता है, और झूठमूठ के लिए क्रमशः पहले, दूसरे, तीसरे इत्यादि

छात्र के थैलों में ले जाकर मुट्ठी खोल देता है।

और शून्य आम देने की औपचारिकता वह चाहे जितनी लम्बी पंक्ति में खड़े चाहे जितने छात्रों के साथ करता जा सकता है। टोकरी में बचे आमों की संख्या 3 ही रहेगी यानी शेष कभी शून्य नहीं होगा। इस प्रकार 0 आम पाने वाले छात्रों की संख्या अनगिनत होगी। यानी उसका कोई अन्त नहीं आएगा। अर्थात् (3/0 = अनन्त, जिसके लिए संकेत है, $+\infty$)

अंतिम उदाहरण (c) सबसे मजेदार है। इसे ध्यान से समझिए। यहाँ आमों की संख्या शून्य (यानी टोकरी खाली) है और प्रति छात्र शून्य आम (यानी कुछ नहीं) देना है। यदि प्रारम्भ में ही, उदाहरण (a) की तरह, टोकरी पर गौर किया जाए तो "शेष" शून्य होने के कारण क्रिया समाप्त समझी जा सकती है। अतः इस स्थिति में

$0/0 = 0$

लेकिन चूंकि प्रत्येक छात्र को 0 आम ही देना है, हम मर्जी के अनुसार जितने छात्रों को चाहें, उतनों को आम दे सकते हैं और उसके बाद टोकरी का शेष शून्य बताकर क्रिया बन्द कर सकते हैं। जैसे यदि एक छात्र को आम देने के बाद समाप्ति की तो $\frac{0}{0} = 1$ इत्यादि। यदि दो छात्रों को आम देने के बाद समाप्ति की तो $\frac{0}{0} = 2$ इत्यादि । और यदि चाहें तो, उदाहरण (b) *की तरह अनगिनत छात्रों को भी आम पाने का भागीदार बना सकते* हैं ।

अर्थात् 0/0 का मान अनिर्णीत है। वह *स्थिति के अनुसार* कुछ भी हो सकता है। जी हाँ, शून्य भी, अन्य कोई परिमित संख्या भी, या अनन्त भी।

इस लम्बे विचार-विमर्श के बाद हम फिर रामानुजन की कक्षा की बात पर आते हैं, जहाँ से चर्चा प्रारम्भ हुई थी । तोते की तरह रटने की बात अलग है, लेकिन यदि गणित की सूक्ष्मताओं को समझना चाहते हो तो उसका अध्ययन बारीकी से करना होगा। इसके लिए रामानुजन की तरह गणित का प्रेमी बनना होगा। बड़ी लगन से गणित का अध्ययन करना होगा। तब कोई आश्चर्य की बात नहीं कि आप भी दूसरों की गलतियाँ पकड़ लें। गणित के स्वस्थ तथा गहरे ज्ञान के कारण रामानुजन को दूसरों की भूलों का पता लगा।

गणितीय दोषों, भूलों और गलतियों का पता लगाना गणित के ठोस ज्ञान का परिचायक

है और बुद्धिमता का मापदंड। नीचे हम गणित के विभिन्न क्षेत्रों से कुछ दोषपूर्ण क्रियाओं से युक्त निगमन उपपत्तियाँ, व्युत्पत्तियाँ और अन्य विधियाँ दे रहे हैं। उनमें कहाँ और कौन-सी गलतियाँ की गई हैं, इसे खोजने और बताने का प्रयत्न कीजिए। इससे बुद्धि का व्यायाम होगा और वह और पैनी हो जाएगी। यह ध्यान रखिए कि दूसरे की गलती खोजने और बताने में आपका ध्येय उसे नीचा समझना या दिखाना नहीं होना चाहिए, क्योंकि गलतियाँ सबसे होती हैं। जी हाँ, बड़े-बड़े गणितज्ञों से भी। स्वयं रामानुजन ने भी कुछ गलतियाँ की हैं।

'To err is human' एक सामान्य कहावत है।

बिना किसी दुर्भावना के गलती (fault) खोजना शिक्षाप्रद और लाभकारी होता है। तो फिर नीचे का दोषपूर्ण गणित ध्यान से पढ़िए, उसकी गलतियाँ बताइए और ज्ञानी कहलाइए।

बीजगणित तथा अंकगणित

सबसे पहले हम *बीजगणित* का विषय लेते हैं जिसके बारे में कहा गया है कि "बीजं च विमलामतिः" अर्थात् "बीजगणित निर्मल बुद्धि है"। यानी बीजगणित को एक प्रकार से निर्मल बुद्धि के तुल्य बताया गया है। तो क्यों न हम भी गणितीय तुल्यताओं (अर्थात् समीकरणों) से शुरू करें।

उदाहरण (1) : यदि $x = 1$ (1)

तो $x^3 = 1$ (2)

और $x^5 = 1$ (3)

अत : $\frac{x^5}{x^3} = \frac{1}{1} = 1$

अर्थात्, $x^2 = 1$ (4)

यानी $x = \pm 1$

अर्थात् समीकरण (4) में x का मान $+1$ भी हो सकता है और -1 भी। लेकिन ऊपर (1),(2) या (3) किसी में भी, हमनें $x = -1$ नहीं लिया और न ले सकते हैं। इसलिए x का -1 मान सही नहीं है। बताइये, गलती कहाँ है?

उदाहरण (2) : समीकरण $x^2 - x + 1 = 0$ (5)
को सरल विधि से (बिना सूत्र लगाए) हल करना। यहाँ (5) को हम इस प्रकार लिख सकते हैं :

$$x - x^2 = 1 \qquad (6)$$

यानी $x(1-x) = 1$

अर्थात् $1-x = \frac{1}{x}$, क्योंकि x शून्य नहीं है।

या $x+\frac{1}{x}=1$

या $x+\frac{1}{x} = x - x^2$, समीकरण (6) से।

दोनों ओर से x, घटाने पर

$$\frac{1}{x} = -x^2$$

यानी $x^3 = -1$

अतः $x = -1$

लेकिन इस मान को दिए गए समीकरण (5) में रखने पर पता लगता है कि यह मान सही नहीं है। तो फिर हमने कौन-सी गलती की।

उदाहरण (3) : हम जानते हैं कि, गुणनखंड करने पर

$$(a^2 - b^2) = (a+b)(a-b) \qquad (7)$$

इसमें a और b का मान कुछ भी हो सकता है। अतः (7) में हम a और b की जगह x लेते हैं, तो (7) का रूप हो जाएगा

$$x^2 - x^2 = (x+x)\,(x-x) \qquad (8)$$

लेकिन बाईं ओर x बाहर (common) लेने के बाद

$$x^2 - x^2 = x\,(x-x)$$

अत: (8) को अब हम इस प्रकार लिख सकते हैं।

$$x\,(x-x) = (x+x)\,(x-x)$$

दोनों तरफ के समान या एक से (same) गुणनखंड को काटने पर मिलेगा

$$x = x+x$$

अर्थात् $1x = 2x$

यानी $1 = 2$ (9)

क्योंकि दोनों तरफ से x कट गया। लेकिन (9) तो स्पष्टतया गलत है।

उदाहरण (4) : एक रुपये में 100 पैसे होते हैं, यह तो सब जानते हैं। लेकिन एक रुपये को एक पैसे के बराबर सिद्ध करने का जादू भी देखिए।

एक रुपया = 100 पैसे

= (10 पैसे) x (10 पैसे) (10)

लेकिन 10 पैसे तो 1/10 रुपये के तुल्य होते हैं, अतः समीकरण (10) से

एक रुपया $= \frac{1}{10}$ रुपये x $\frac{1}{10}$ रुपये

$= \frac{1}{100}$ रुपये = 1 पैसे !

उदाहरण (5) : हम आसानी से देख सकते हैं कि

$$25-60 = 49-84$$

अब दोनों तरफ 36 जोड़ने पर

$$25-60+36 = 49-84+36$$

अर्थात् $5^2 - 2\,(5 \times 6) + 6^2 = 7^2 - 2\,(7 \times 6) + 6^2$

यानी $(5-6)^2 = (7-6)^2$, क्योंकि $a^2 - 2\,(a \times b) + b^2 = (a-b)^2$

वर्गमूल लेने पर $5-6 = 7-6$

और अंत में दोनों ओर 6 जोड़ने पर

$$5=7$$

जो कि स्पष्टतया सही नहीं है।

उदाहरण (6) : हम जानते हैं कि,
$(a^3-b^3) = (a-b)(a^2+ab+b^2)$ (11)
इसमें $a = x$ और $b = x$ रखने पर
$x^3-x^3 = (x-x)(x^2+xx+x^2)$
लेकिन $x^3-x^3 = x^2(x-x)$
अत: $x^2(x-x) = (x-x)(x^2+x^2+x^2)$
अर्थात् $x^2 = x^2+x^2+x^2$
या $x^2 = 3x^2$
यानी $1=3$
इसी प्रकार $(a^4-b^4) = (a^2+b^2)(a+b)(a-b)$
से हम $x^3 = 2x^2 \quad 2x$
या $x^3 = 4x^3$
यानी 1=4, सिद्ध कर सकते हैं, इत्यादि।

उदाहरण (7): अनन्त गुणोत्तर श्रेणी के योगफल के सूत्र से,

$$a+ar+ar^2+ar^3+\ldots\ldots = \frac{a}{1-r} \qquad (12)$$

इसे लगाकर हम आसानी से देख सकते हैं कि ($a=x$, $r=x$)

$$x+x^2+x^3+x^4 \text{------} = \frac{x}{1-x} \qquad (13)$$

उसी सूत्र (12) को लगाकर निम्नलिखित श्रेणी के लिये भी योगफल प्राप्त कर सकते हैं ($a=1$, $r = 1/x$)

$$1+\frac{1}{x}+\frac{1}{x^2}+\frac{1}{x^3}+------=\frac{1}{1-\frac{1}{x}}=\frac{x}{x-1} \quad (14)$$

अतः (13) और (14) को जोड़ने पर

$$(x+x^2+x^3+\ldots\ldots)+(1+\frac{1}{x}+\frac{1}{x^2}+\ldots\ldots)=\frac{x}{1-x}+\frac{x}{x-1}=\frac{x}{1-x}-\frac{x}{1-x}=0 \quad (15)$$

जो कि सही नहीं मालूम पड़ता। क्योंकि यदि x का मान धनात्मक (positive) है, तो बाईं ओर के सारे पद धनात्मक होंगे। तो फिर उनका योग शून्य कैसे हो सकता है। कुछ भी हो परिणाम 18 वीं शताब्दी में यूरोप के महान् गणितज्ञ लियोनार्ड ऑयलर (Euler) ने भी इसी (15) को गलत विधि से "सिद्ध" किया था।

उदाहरण (8) : इस अनन्त श्रेणी को देखें।

$$x^2+\frac{x^2}{1+x^2}+\frac{x^2}{(1+x^2)^2}+----$$

यह एक गुणोत्तर श्रेणी है जिसमें प्रथम पद x^2 है और सामान्य अनुपात $\frac{1}{(1+x^2)}$ है । अतः सूत्र (12) से

$$x^2+\frac{x^2}{(1+x^2)}+\frac{x^2}{(1+x^2)^2}+----=\frac{x^2}{1-(\frac{1}{1+x^2})}=1+x^2$$

अब $x = 0$ लिया तो, $0+0+0+-----= 1+0$

यानी $0= 1$ (16)

उदाहरण (9) : इसी प्रकार अनन्त श्रेणी

$1-x+x^2-x^3+x^4-x^5+\ldots\ldots\ldots\ldots$

गुणोत्तर है, जिसमें $a=1$ और $r=-x$ है।

अतः सूत्र (12) से

$$1-x+x^2-x^3+x^4 \text{-----} = \frac{1}{1+x} \quad (17)$$

यदि $\frac{1}{(1+x)}$ में सतत विभाजन (Continued division) करें या $(1+x)^{-1}$ में द्विपद प्रमेय (Binomial Theorem) लगायें, तब भी हमें परिणाम (17) प्राप्त हो जाता है।

इसमें यदि x का मान 1 लें तो हमें यह विचित्र फल मिलेगा

$$1-1+1-1+1-1+\text{--------} = \frac{1}{2} \quad (18)$$

जिसको पश्चिम के अनेक बड़े-बड़े विद्वानों ने इस प्रकार लिखा था,

$(1-1)+(1-1)+(1-1)+\text{-------} = 1/2$

अर्थात् $0+0+0+0+\ldots\ldots = 1/2$ (19)

समीकरण (18) में "शून्य" से "कुछ" प्राप्त करने की सिद्धि का आभास मिलता है, ठीक उसी प्रकार जैसे कुछ लोग खाली हाथ दिखाकर छूमन्तर से अंगूठी बनाने का चमत्कार दिखाते हैं (creating something out of nothing)

समीकारण (18) को हम इस प्रकार भी लिख सकते हैं

$1+(-1+1)+(-1+1)+(-1+1)+\text{-----} = 1/2$

अर्थात् $1+0+0+\ldots = 1/2$

या $1 = 1/2$

एक अन्य विधि देखिए।

यदि $S = 1-1+1-1+1-1+\text{-----}$

तो $S = 1-(1-1+1-1+1 \text{------})$

$= 1 - S$

$2S = 1$ सर $S = 1/2$

मानो ऐसा लगता है कि गणित से कुछ भी सिद्ध किया जा सकता है।

उदाहरण (10) : हम जानते हैं कि

$$(\sqrt{a}) \times (\sqrt{b}) = +\sqrt{ab} \quad (20)$$

जैसे $\sqrt{9} \times \sqrt{16} = \sqrt{144}$

जो कि सही है क्योंकि $\sqrt{9} \times \sqrt{16} = 3 \times 4 = 12$ और दाईं ओर से भी यही प्राप्त होगा (वर्गमूलों का मान सब जगह धन लेने पर)। काल्पनिक (imaginary) संख्याओं का गणित जानने वालों को मालूम है कि

$\sqrt{-1} = \pm i$, जहाँ $i = +\sqrt{-1}$ (21)

लेकिन यदि धन का चिह्न लें तो

$\sqrt{-4} = 2i$ (22)

अब (20) में a और b को −4 लेते हैं।

अतः $(\sqrt{-4}) \times (\sqrt{-4}) = +\sqrt{(-4)\times(-4)} = \sqrt{16}$ समीकरण (20) से

अर्थात् $(2i \times 2i) = 4$

यानी $4i^2 = 4$

अर्थात् $i^2 = +1$

लेकिन हम जानते हैं कि i^2 का मान −1 होता है. जो कि (21) का वर्ग लेने से भी स्पष्ट है।

उदाहरण (11) : हम जानते हैं कि

$\sqrt{a-b} = i\sqrt{b-a}$ (23)

क्योंकि $a - b = -(b - a)$ तथा $i = \sqrt{-1}$

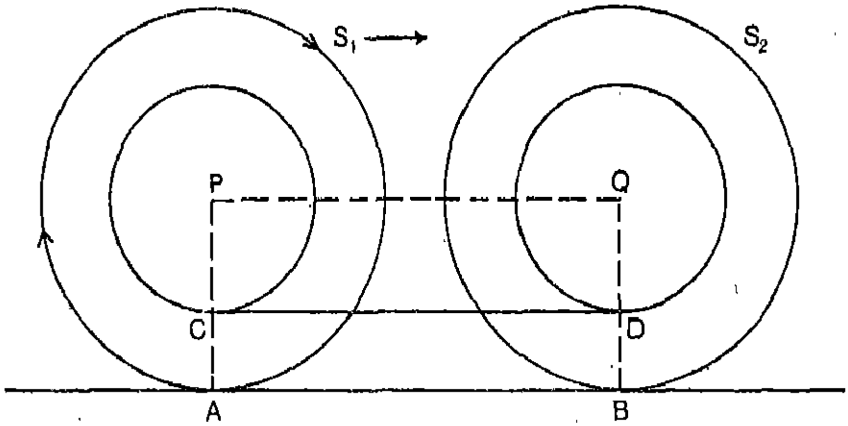
इसी प्रकार $\sqrt{b-a} = i(\sqrt{a-b})$ (24)

अतः गुणा करने पर (23) और (24) से

$(\sqrt{a-b})(\sqrt{b-a}) = i^2(\sqrt{b-a})(\sqrt{a-b})$

अर्थात् $i^2 = 1$ (क्योंकि $a \neq b$ मान लिया) लेकिन यह तो सही नहीं है।

i^2 का मान तो −1 होता है। बताओ भूल या दोष कहाँ है।



चित्र 1.1

ज्यामिति और त्रिकोणमिति

उदाहरण (12)

मान लो मोटर का पहिया सड़क पर लुढ़ककर एक चक्कर में S_1 स्थिति से S_2 स्थिति में पहुँचा। पहली स्थिति में टायर का जो बिंदु A सड़क के संपर्क में था, एक पूरा चक्कर लगाकर फिर सड़क के संपर्क में आ गया (बिंदु B के रूप में) और उसी के धातु के पहिए का बिंदु C भी एक चक्कर के बाद D पर आ गया। AB दूरी पहिए के बाहरी घेरे के बराबर होगी जिसकी त्रिज्या (radius) PA है।

यदि $PA = R$ हो तो $AB = 2\pi R$ होगा। चित्र से स्पष्ट है कि $CD = AB = 2\pi R$

अर्थात् C बिंदु ने भी वही दूरी $2\pi R$ तय की। लेकिन यह कैसे सम्भव हो सकता है, क्योंकि त्रिज्या PC का मान PA अर्थात् R से छोटा है। दूसरे शब्दों में AB बड़े वृत्त की और CD छोटे वृत्त की परिधि है, परन्तु चित्र से दोनों के मान बराबर हैं। फिर रहस्य क्या है?

उदाहरण (13) : त्रिकोणमिति में ऑयलर का सूत्र

$\left(e^{i\theta} = \cos\theta + i\sin\theta\right)$

प्रसिद्ध है। इसमें θ का मान 2π लें तो

$e^{2\pi i} = 1$

इसी प्रकार θ का मान 4π लेने पर, $e^{4\pi i} = 1$

अतः $e^{2\pi i} = e^{4\pi i}$

दोनों ओर का लागेरिथ्म (logarithm) लेने पर

$2\pi i \log e = 4\pi i \log e$ (26)

यदि लागेरिथ्म का आधार e (जिसका मान 2.71828 के लगभग होता है) तो

$\log_e e = 1$

इसलिए $2\pi i = 4\pi i$

अर्थात् $2 = 4$

जो सर्वथा गलत है। पर यह हुआ क्यों और कैसे?

उदाहरण (14) : कोई त्रिभुज ABC में रेखा AD कोण A को दो बराबर भागों में बाँटती है, अर्थात् AD कोण ABC का अर्धक (bisector) है। अतः सर्वविदित प्रमेय से

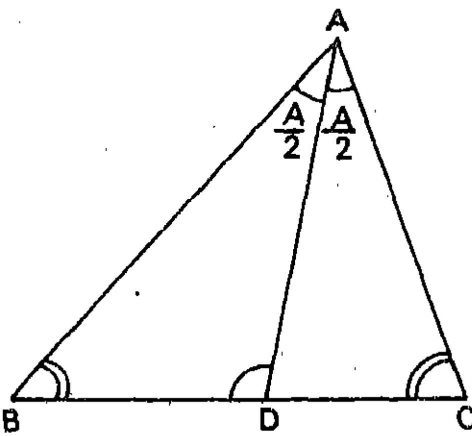
$$\frac{BD}{DC} = \frac{AB}{AC}$$

अर्थात् $\frac{AB}{BD} = \frac{AC}{DC}$

या

$$\frac{\sin(B + A/2)}{\sin(A/2)} = \frac{\sin(C + A/2)}{\sin(A/2)}$$

यानी

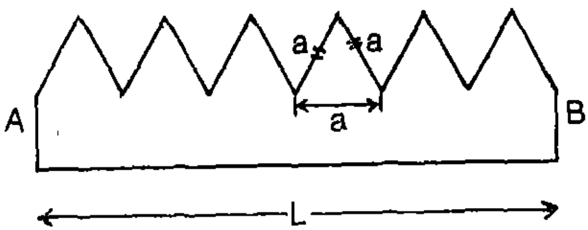


चित्र 1.2

sin (B+A/2) =sin (C+A/2)

अर्थात् $B+\frac{A}{2}=C+\frac{A}{2}$

यानी कोण B = कोण C

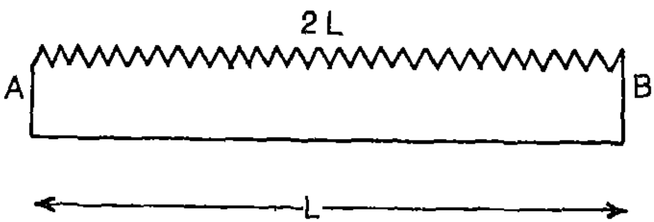


चित्र 1.3

अर्थात् भुजा AB = भुजा AC

जिसका मतलब यह हुआ कि हम किसी भी त्रिभुज को समद्विबाहु (isosceles) सिद्ध कर सकते हैं। जी हाँ अवश्य, परन्तु धोखा देकर । धोखा कहाँ दिया गया बताइये?

उदाहरण (15) :



चित्र 1.4

एक आरी (Saw) है। जिसकी लम्बाई AB का मान L है। मान लो n दाँते (teeth) हैं जिनमें से प्रत्येक की आकृति समबाहु (equi-lateral) त्रिभुज की दो पार्श्व (lateral) भुजाओं की तरह है। त्रिभुज की प्रत्येक भुजा की लम्बाई होगी $L/n = a$ और इस प्रकार A से B तक की टेढ़ी-मेढ़ी (Zig-Zag) लकीर की लम्बाई होगी $2a \times n = 2L$

अर्थात् आरी के लम्बाई की दुगुनी। ध्यान देने की बात यह है कि यह दाँतों की संख्या n पर निर्भर नहीं है। इसका मतलब यह हुआ कि यदि हम दाँतों की संख्या बढ़ाते जाएँ तो दाँते छोटे-छोटे होते जाएँगे, परन्तु टेढ़ी-मेढ़ी लकीर की लम्बाई 2L ही रहेगी। लेकिन यदि n का मान बहुत ही बड़ा लें तो टेढ़ी-मेढ़ी लकीर और सीधी लकीर में बहुत ही कम व्यावहारिक अन्तर दिखेगा (चित्र 1.4 देखें) ।

लेकिन एक की लम्बाई 2L और दूसरे की L है। इस प्रकार n का मानं असीमित (unlimited) करने पर टेढ़ी-मेढ़ी लकीर सीधी लकीर जैसी हो जाएगी। लेकिन उसकी लम्बाई 2L होगी, जबकि होना चाहिए L, जोकि A और B के बीच की दूरी है ।

विविध

उदाहरण (16): अवकलन या चलन कलन (differential calculus) पढ़ने वाले विद्यार्थियों को अच्छी तरह मालूम है कि, यदि

$y = x^n$, तो $\frac{dy}{dx} = nx^{n-1}$

जिससे x का अवकलन (derivative) 1 तथा x^2 का 2x होगा। अब इस पर विचार कीजिए।

$x + x + x + x + \ldots\ldots(x \text{ times}) = xx = x^2$

दोनों और अवकलन करने से

$1 + 1 + 1 + \ldots\ldots (x \text{ times}) = 2x$

अर्थात् $x = 2x$ या $1=2$

फिर वही चक्कर। क्या उच्चगणित से भी उसी प्रकार की गलत बातें सिद्ध की जाती हैं। जी हाँ, पर केवल मनोरंजन के लिए। सतर्क होने पर गलती पकड़ में आ जाएगी।

उदाहरण (17): जो विद्यार्थी समाकलन (integration) जानते हैं वे

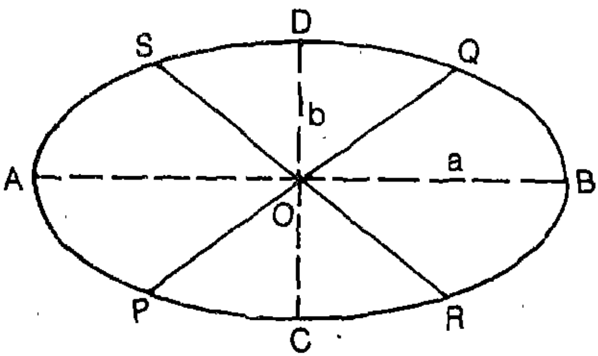
$$x^n dx = \frac{x^{n+1}}{n+1}, n \neq 1$$

नियम से अवश्य परिचित होंगे । अब देखिए एक कमाल ऊपर के नियम से

$$\int \frac{dx}{x^2} = \int x^{-2}\, dx = -\frac{1}{x}$$

$$\text{अतः} \int_{-1}^{1} \frac{dx}{x^2} = -\left[\frac{1}{x}\right]_{-1}^{1} = -\left[\frac{1}{1}+\frac{1}{1}\right] = -2$$

लेकिन $\frac{1}{x^2}$ का मान तो कभी या कहीं भी ऋणात्मक (negative) नहीं है। फिर समाकलन का नतीजा -2 क्यों आया। उत्तर है, भूल करने से।



चित्र 1.5

उदाहरण (18):
अब थोड़ा असमानताओं पर विचार कीजिए।

एक स्पष्ट असमता है कि संख्या 3, संख्या 2 से बड़ी है,
अर्थात् 3>2।

दोनों और log (1/2) से गुणा करने पर

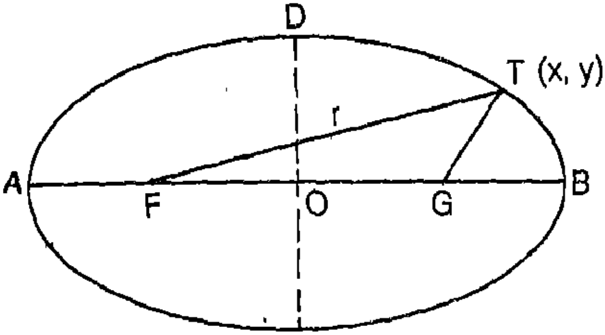
3 log (1/2) >2 log (1/2)

अर्थात् $\log(½)^3 > \log(½)^2$

(क्योंकि $\log m^n = n \log m$)

अतः $(1/2)^3 > (1/2)^2$ अर्थात् $\frac{1}{8} > \frac{1}{4}$

परन्तु ऐसा है नहीं। आपकी बात ठीक है, लेकिन गलती बताओ तो बात बने।



चित्र 1.6

उदाहरण (19): विश्लेषणात्मक (analytic) ज्यामिति पढ़ने वाले जानते हैं कि दीर्घ वृत्त (ellipse) में दो व्यास PQ तथा RS, संयुग्मी (conjugate) कहे जाते हैं, यदि ये एक दूसरे के समान्तर जीवाओं (chords) के अर्धक हों।

इसके लिये शर्त है कि

$$m_1 m_2 = -\frac{b^2}{a^2} \quad (27)$$

जहाँ m_1, m_2 व्यासों की प्रवणताएँ (slopes) हैं और 2a, 2b दीर्घवृत्त की बड़ी और छोटी अक्ष (axes) हैं।

अब परिभाषा के अनुसार, यह दोनों अक्ष AB, CD भी संयुग्मी हैं, तथा एक दूसरे पर लम्ब (perpendicular) भी जिसके कारण $m_1 \times m_2$ का मान इनके लिए –1 होगा।

अतः (27) से $-1 = -b^2/a^2$

अर्थात् $a^2 = b^2$, या a=b

अर्थात् हमने दीर्घवृत्त को वृत्त सिद्ध कर दिया, बेशक एक भूल करके। उसे बताइए।

उदाहरण (20) : किसी भी दीर्घवृत्त को वृत्त सिद्ध एक अन्य विधि से भी कर सकते हैं। यदि आपको अधिकतम और न्यूनतम मान निकालना अवकलन (calculus) से आता हो। किसी भी बिंदु T (x,y) के लिए नाभीय (focal) दूरी, TF, (a+ex)

होती है जहाँ e दीर्घवृत्त की उत्केन्द्रता है। यदि

$r = a + ex,$

तो $\frac{dr}{dx} = e$ (जो एक स्थिर राशि है)

अर्थात् $\frac{dr}{dx} \neq 0$

जिसका मतलब यह हुआ कि r का मान न तो अधिकतम है और न ही न्यूनतम। अतः वह केवल वृत्त ही हो सकता है।

अध्याय 2

औसत निकालने का विश्वव्यापी चलन

शिक्षा-संस्थाओं में गर्मियों की छुट्टियाँ चल रही थीं। एक नवयुवक शहर में सांख्यिकी (Statistics) के पाठ्यक्रम को पूरा करके अभी थोड़े ही दिन पहले ग्राम स्थित अपने घर लौटा था। ऐसे लड़के जो उच्च शिक्षा पाए हों, गांव में कम थे। इसलिए विवाह योग्य वर की तलाश में आने वाले लोगों की नजर में वह नवयुवक काफी उपयुक्त समझा जाता था। प्रस्तावों की कोई कमी नहीं थी। अन्त में नवयुतक के अनपढ़ बूढ़े पिता ने उसकी शादी थोड़ी-सी दूर पर स्थित एक गांव के परिवार में तय कर दी। उन दो गांवों के बीच में एक छोटी नदी थी।

विवाह का दिन आया। नवयुवक दूल्हे के साथ बारात ने प्रस्थान किया। बारातियों में अधिकतर अनपढ़ थे। गर्मियों में नदी में पानी कम होने से लोग उसे पैदल ही पार कर लेते थे। लेकिन उस दिन नदी में पानी का जलस्तर ज्यादा था। पिछली रात को ऊपरी जलग्रहण क्षेत्र में यकायक पानी बरसने के कारण शायद ऐसा हुआ था। बाराती पैदल चलकर नदी पार करने में झिझक रहे थे। अतः बारात वहीं, नदी किनारे रुक गई।

वास्तव में नदी में पानी की गहराई सब स्थानों पर एक-सी नहीं थी। उसे पैदल पार

करने में खतरा था, क्योंकि बाराती भी तो सभी लम्बे कद के नहीं थे। समस्या यह थी कि इस बात का कैसे पता लगे कि उस समय नदी पार करना सुरक्षित है या नहीं।

लेकिन दूल्हा तो सांख्यिकी पढ़ा-लिखा था। उस विषय में, किसी प्रमाण कि विभिन्न मान होने पर उनके औसत (average) को प्रतिनिधि के रूप में प्रयोग करने की जो शिक्षा दी जाती है, आखिर वह कब काम आती। इसलिए बारात में सम्मिलित सभी लोगों की उसने (दूल्हे ने) ऊँचाई का औसत निकाला, और नदी के विभिन्न स्थलों की गहराई लेकर उसका भी औसत निकाला।

चूंकि बारात की औसत ऊँचाई नदी की औसत गहराई से अधिक आई, उस पढ़े-लिखे दूल्हे ने बारात के नदी पार करने में कोई खतरा न समझा। अतः उसने घोषणा की कि नदी पार करना बिल्कुल सुरक्षित है।

लोग तो किसी सुरक्षित उपाय का उत्सुकता से इन्तजार कर ही रहे थे। जब आधुनिक शिक्षा प्राप्त किए दूल्हे ने सुरक्षा का पता गणना द्वारा लगा ही लिया, तो फिर खतरा किस बात का।

उधर विवाह का शुभमुहूर्त भी निकट आता जा रहा था। अतः बाराती नदी पार जाने को तैयार हो गए, और आदेश मिलते ही उसे पैदल पार करने लगे।

उसके बाद क्या हुआ, यह तो पता नहीं। लेकिन सामान्य बुद्धिवाले लोग भी परिणाम का अनुमान लगा सकते हैं।

सांख्यिकी-सिद्धांत के दुरूपयोग का यह एक "नीम हकीम खतरेजान" वाला उदाहरण है। जिन लोगों को सांख्यिकी के ऐतिहासिक विकास की जानकारी है, उनको याद होगा कि उस विषय के ज्ञान का दुरूपयोग या खतरनाक इस्तेमाल भी बहुत हुआ है और आज भी हो रहा है।

कुछ भी हो, औसत निकालने की विधि और औसत (average) को प्रयोग करने की प्रथा बहुत प्राचीन है और विश्व की सभी सभ्यताओं में इसका चलन था।

इस अध्याय में तत्सम्बन्धित कुछ रोचक बातों का वर्णन किया गया है। लेकिन पहले हम एक बात स्पष्ट कर दें। कभी-कभी औसत का प्रयोग केवल एक गणितीय भाषा के रूप में किया जाता है, क्योंकि नियम या सूत्र की स्थिति के अनुसार ऐसा करना

सुविधाजनक होता है। लेकिन इन परिस्थितियों में भी औसत का प्रयोग हमको सूत्र या नियम की अन्तर्दृष्टि देता है।

उदाहरण (Examples)

(i) समान्तर श्रेणी का योगफल

$(a+l) \times \frac{n}{2}$

= (प्रथम और अंतिम पदों का औसत) x (पदों की संख्या)

(ii) समलम्ब चतुर्भुज (Trapezium) का क्षेत्रफल

= (समान्तर भुजाओं का औसत) x (उनकी आपसी दूरी)

(iii) वलयाकार पट्टी (annulus) का क्षेत्रफल

$\pi R^2 - \pi r^2 = (R+r) x d$

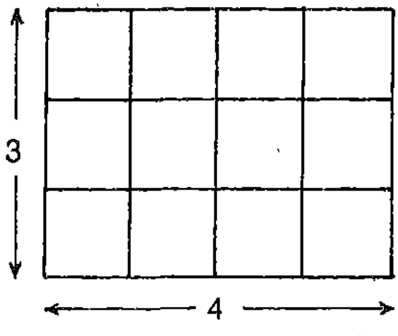
= (अन्तः और बाह्य वृत्तों की परिधियों का औसत) x (पट्टी की चौड़ाई)

(iv) एक समान या स्थिर त्वरण (acceleration) से चलने वाले कण द्वारा तय की गई दूरी $s=½(u+v).t$

= प्रारम्भिक तथा अंतिम गतियों का औसत x समय

अब माना कि त्वरण यानी वेग वृद्धि स्थिर व धनात्मक है। यदि हम प्रारम्भिक गति से दूरी का हिसाब लगायेंगे, तो वह वास्तविक दूरी से कम आएगी, क्योंकि वेग तो बढ़ता जाता है। और यदि विचाराधीन यात्रा के अन्त की गति v से दूरी का मान निकालते हैं तो वह सही मान से अधिक आएगा क्योंकि v गति होने के पहले उसका वेग कम था।

इसलिए यह एक रोचक बात है कि उन दो गतियों का औसत लेकर जो दूरी सरलता से (यानी यात्रा समय का गुणा करके) निकाली गई, वह एकदम ठीक मान है, ऐसा सिद्ध किया जा सकता है। सब तरह की त्वरित गतियों में ऐसा नहीं होता।



चित्र 2.1

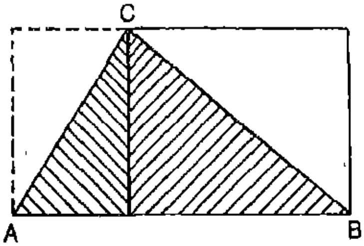
समतल आकृतियों के क्षेत्रफल

आयताकार क्षेत्र को इकाई वर्गों में विभाजित करके उसके क्षेत्रफल के लिए सूत्र

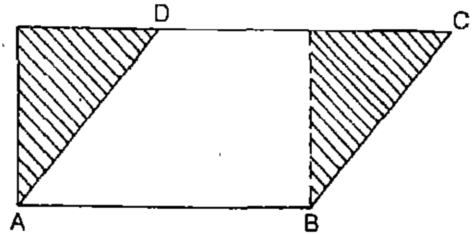
A = लम्बाई x चौड़ाई (1)

निकालना अति प्राचीन काल में भी आसान रहा होगा।

इसके बाद त्रिभुज तथा समानान्तर चतुर्भुज आकृतियों के क्षेत्रफल तत्संबंधित आयताकार क्षेत्रों

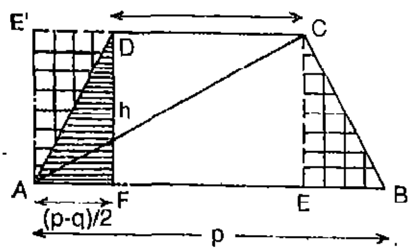


चित्र 2.2



चित्र 2.3

(चित्र 2.2 और 2.3) के आधार पर विचार-विमर्श करके धीरे-धीरे प्राप्त कर लिए गए होंगे। व्यापक त्रिभुज के पहले समकोण त्रिभुज और द्विसमबाहु त्रिभुज पर विचार करना स्वाभाविक था।



चित्र 2.4

समलम्ब चतुर्भुजों (trapezia) में द्विसमलम्ब चतुर्भुज की माप कठिन नहीं थी।

उसके लिए सूत्र था, (चित्र 2.4 देखें)

$$A=\frac{1}{2}(p+q)Xh \qquad (2)$$

संभव है कि इस सूत्र की प्राप्ति समलम्ब

चतुर्भुज ABCD को आयत AECE' के समान देखने से की गई हो, जैसा कि चित्र 2.4 से स्पष्ट है (जिसमें त्रिभुज CEB और AE'D बराबर है) इस प्रकार

$$A = qh + \left(\frac{p-q}{2}\right) h \tag{3}$$

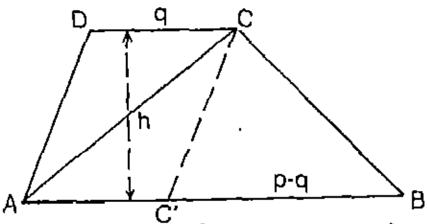
एक और सरल विधि आकृति ABCD को कर्ण AC द्वारा दो त्रिभुजों, ABC और CDA में विभाजित करता है।

तब, $A = \frac{1}{2}ph + \frac{1}{2}qh$ (4)

जिससे वही सूत्र प्राप्त हो जाता है।

इस सरल विधि के आचरण से तो व्यापक समलम्ब चतुर्भुज (trapezium) का क्षेत्रफल पाने में कोई कठिनाई नहीं है। क्योंकि नियम (4) उस पर भी हूबहू लागू होता है। हाँ, यदि इस व्यापक समलम्ब चतुर्भुज को समानान्तर चतुर्भुज ADCC' तथा त्रिभुज BCC' में विभाजित करें (चित्र 2.5) तो उसके लिए नियम (3) लागू हो जाएगा। कुछ भी हो, सूत्र (2) सब समलम्ब चतुर्भुजों के लिए है। उसमें समानान्तर भुजाओं का औसत स्वाभाविक रूप में आ गया है।

और आगे बढ़ने में एक समस्या है। वह है किसी भी व्यापक चतुर्भुज के क्षेत्रफल निकालने की। क्योंकि ऊपर के तरीके यहाँ आसानी से लागू नहीं होते। लगभग 5000 वर्ष पूर्व के गणितज्ञों के सामने तो अवश्य ही एक बड़ी विकट समस्या थी। उदाहरण के लिए एक चतुर्भुजीय खेत या भूखंड का वास्तविक क्षेत्रफल कैसे मालूम किया जाए। लगान और कर वसूली करने वाले राजकीय पदाधिकारियों के लिए यह जानना जरूरी था।

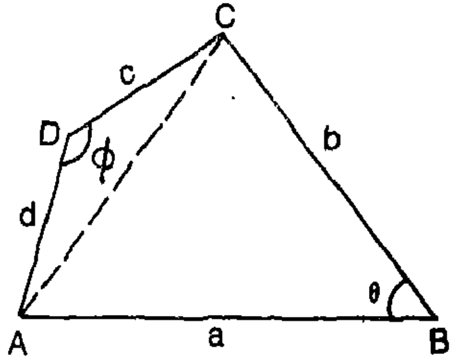


चित्र 2.5

उस समय इस समस्या का हल इस प्रकार किया गया। मान लो चतुर्भुज की भुजाओं के मान, जिन्हें सर्वेक्षण या

वास्तविक माप से मालूम किया गया हो (चित्र 2.6) a,b,c,d हैं। तो चतुर्भुज के क्षेत्रफल के लिए निम्नलिखित नियम, जिसे 'सर्वेक्षक सूत्र' कहते हैं, का प्रयोग किया गया।—

$$A = \left(\frac{a+c}{2}\right) \times \left(\frac{b+d}{2}\right) \qquad (5)$$



चित्र 2.6

यह सूत्र गणितीय दृष्टि से सही नहीं है और न सामान्यतया सूक्ष्म। फिर भी 5000 वर्ष पुराने काल का यह प्रयास सराहनीय है, और इसका बहुत ही ऐतिहासिक महत्व है, क्योंकि वह संसार की लगभग सभी सभ्यताओं में प्रयोग किया गया। और यह प्रयोग बाद में सूक्ष्म सूत्र मालूम होने के बाद भी चलता रहा। सच तो यह है कि प्रायः आज भी गांव में चतुर्भुज खेतों और भूखण्डों के क्षेत्रफल को सरलता और शीघ्रता से मालूम करने के लिए उसका उपयोग किया जाता है।

'सर्वेक्षक सूत्र' (5) के प्राचीन काल में उपयोग में लाए जाने के कुछ संदर्भ इस प्रकार हैं-

1. सुमेरिया (ई. पू. तृतीय सहस्त्राब्दी)
2. मेसोपोटामिया (ई. पू. द्वितीय सहस्त्राब्दी)
3. मिस्र में नील नदी के किनारे बसे इडफू (Id fu or Edfu) स्थान पर बने होरस (Horus) के मंदिर के अभिलेख।

इनका समय ई. पू. प्रथम शताब्दी है, और हल किए अनेक उदाहरण में से दो इस प्रकार थे-

पहला,

a=22, b=4, c=23, d=4

और दूसरा,

$a=5, b=20, c=8, d=15$

4. चीन का एक ग्रन्थ *वूत्शाओ सुआन चिंग* (Wu Tshao Suan Ching) जिसका संग्रह सरकारी विभागों के लिए ई. चतुर्थ शताब्दी में किया गया। खेत की पूर्वी, पश्चिमी, दक्षिणी तथा उत्तरी भुजायें 35, 45, 25 और 15 पाद (paces) थीं, और उत्तर 800 था।
5. भारत में सर्वप्रथम ब्रह्मगुप्त (ई 628) कृत *ब्राह्मस्फुट सिद्धान्त* (XII- 21) जहाँ नियम इन शब्दों में दिया गया है–

   "*स्थूलफलं त्रिचतुर्भुज-बाहुप्रतिबाहु योगदल-घातः*" *अर्थात्*

   "त्रिभुज और चतुर्भुज का स्थूल क्षेत्रफल आमने-सामने की भुजाओं के योग के आधों का गुणनफल होता है।"

इसमें अनेक बातें कही गई हैं। पहली तो यह है कि इस नियम से समान्यतया स्थूल (rough या approximate) क्षेत्रफल प्राप्त होता है। यह बात स्पष्ट रूप से शायद ब्रह्मगुप्त के पूर्व किसी अन्य विद्वान ने नहीं कही।

वास्तव में स्थिति और भी खराब है। क्योंकि कोई चतुर्भुज भुजाओं मात्र से निर्धारित नहीं होता अर्थात् अनन्य नहीं है। सच पूछो तो दी हुई चार भुजाओं से जितने चाहो उतने चतुर्भुज बन सकते हैं। इसकी सच्चाई देखने के लिए चार भुजाओं के बराबर लम्बाई की चार पतली छड़ें लेकर उनको कब्जों से आपस में जोड़ें। बनी हुई चार कड़ियों की माला की आकृति मनमाने अनेक रूप लेने में समर्थ होगी। इसलिए दी हुई केवल चार भुजाओं से चतुर्भुज के क्षेत्रफल की बात करना कोई अर्थ नहीं रखता।

आर्यभट द्वितीय ने तो अपने *महासिद्धांत* (XV, 70) में यहाँ तक कह दिया कि-

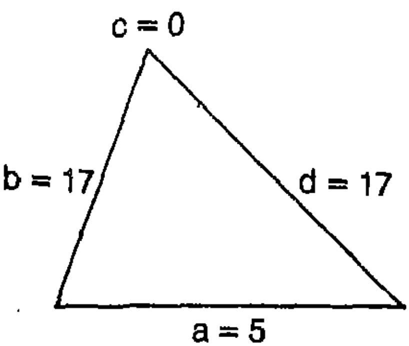
कर्णज्ञानेन बिना चतुरश्रे लम्बकं फलं यद्वा ।
वक्तुं, वाञ्छति गणकोयोऽसौ . मूर्खः पिशाचो वा ॥
अर्थात्

'जो गणितज्ञ चतुर्भुज के किसी कर्ण के जाने बिना (केवल उसकी भुजाओं से) उसके क्षेत्रफल या अवलम्ब (altitude) को बताने की कामना करता है वह या तो मूर्ख है या पिशाच।'

लेकिन इस सिद्धांत से खेतों और भूखंडों के क्षेत्रफल पाने के लिए कोई व्यावहारिक कठिनाई नहीं है, क्योंकि वहाँ तो आकृति निर्धारित है। प्रश्न केवल यह है कि चार भुजाएँ नापकर क्षेत्रफल कैसे पाएँ।

ब्रह्मगुप्त ने दूसरी बात यह कही कि उक्त नियम (5) से त्रिभुज का भी स्थूल क्षेत्रफल निकाला जा सकता है। इसका अर्थ यह है कि त्रिभुज को ऐसा चतुर्भुज समझो जिसकी एक भुजा शून्य है। लेकिन ऐसा, ब्रह्मगुप्त के 700 वर्ष पूर्व इडफू के अन्तर्लेखों में किया जा चुका था, जिसमें 5, 17, 17 भुजाओं वाले त्रिभुज को 5, 17, 0, 17 भुजाओं वाला चतुर्भुज लेकर उसका क्षेत्रफल सूत्र (5) से

$$\left(\frac{5+0}{2}\right) \times \left(\frac{17+17}{2}\right) = 42\frac{1}{2}$$ निकाला गया।



चित्र 2.7

त्रिभुज के लिए सूत्र (5) का उपयोग यूनानी गणितज्ञ हीरॉन (ई. पू. प्रथम शताब्दी) ने भी किया जिसे त्रिभुज के क्षेत्रफल का सही नियम भी मालूम था, जो इस प्रकार है।

$$A = \sqrt{s(s-a)(s-b)(s-c)} \tag{6}$$

जहाँ $s = (a+b+c)/2$ (7)

प्राचीन रोमन लोगों का गणितीय स्तर इतना कम था कि समबाहु त्रिभुज के लिए भी उन्होंने स्थूल सूत्र (5) लगाया। आश्चर्य की बात है कि इन स्थूल रीतियों का उपयोग जर्मनी और रूस में काफी बाद तक होता रहा।

दूसरी विचित्र बात यह है कि यदि सूत्र (5) को a, b, c भुजाओं वाले त्रिभुज पर

लगाया जाता है तो हमें क्षेत्रफल के तीन अलग-अलग मान भी मिल सकते हैं।

$$A_1 = (a/2).(b+c)/2 \quad (8)$$

$$A_2 = (b/2).(c+a)/2 \quad (9)$$

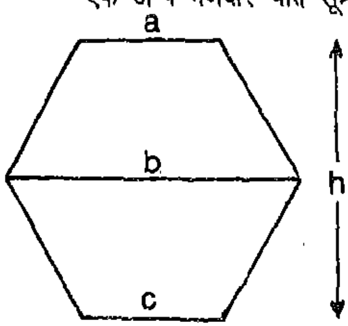
$$A_3 = (c/2).(a+b)/2 \quad (10)$$

यहाँ चौथी 0 भुजा क्रमशः a, b, c के सन्मुख ली गई है। लगता है कि किसी प्राचीन या मध्ययुगीय लेखक ने इस दोष का स्पष्ट रूप से उल्लेख नहीं किया कि एक त्रिभुज के क्षेत्रफल के तीन मान कैसे हो सकते हैं। लेकिन भारत में *श्रीधरीयपाटी* के एक प्राचीन टीकाकार ने (5) का एक बड़ा रोचक दोष बताया है। वह यह कि अक्षेत्र (यानी ऐसा "त्रिभुज" या "चतुर्भुज" जिसका अस्तित्व ही नहीं हो) के लिए भी सूत्र (5) से क्षेत्रफल मिल जाता है। उदाहरण के लिये "त्रिभुज" की भुजाएँ 20, 13, 7 लीजिए [सूत्र (8) से, जो (5) का ही एक रूप है, "त्रिभुज" का क्षेत्रफल] (20/2) . (13+7)/2 = 100 आया। जबकि सही सूत्र (6) से उसका क्षेत्रफल शून्य आएगा, क्योंकि s= 20; (s−a) = 0

इस त्रिभुज का चित्र खींचिए।

सच पूछो तो 20, 13, 7 से कोई वास्तविक त्रिभुज नहीं बनता। जिसके लिये आवश्यक शर्त यह है कि s का मान प्रत्येक भुजा से ज्यादा हो। दूसरे शब्दों में, त्रिभुज या चतुर्भुज में प्रत्येक भुजा का मान अन्य भुजाओं के योगफल से कम होना चाहिये।

एक अन्य मजेदार बात सूत्र (5) के बारे में यह है कि इससे निकाला गया क्षेत्रफल का मान वास्तविक यानी सही मान से *सदैव ज्यादा* आता है (आयत छोड़कर)।

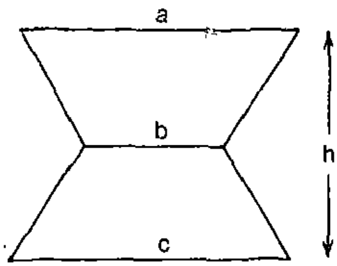


चित्र 2.8

इसको इस प्रकार सिद्ध किया जा सकता है (चित्र 2.8 में) त्रिभुज ABC का क्षेत्रफल, $\Delta_1 = \frac{1}{2} ab \sin\theta < \frac{1}{2} ab$

और त्रिभुज ACD का क्षेत्रफल, $\Delta_2 = \frac{1}{2} cd \sin\phi < \frac{1}{2} cd$

अतः चतुर्भुज का क्षेत्रफल, $S = \Delta_1 + \Delta_2 < \frac{1}{2}(ab + cd)$



चित्र 2.9

इसी प्रकार चतुर्भुज को कर्ण BD द्वारा दो त्रिभुजों में विभाजित करके हम दिखा सकते हैं कि $S < \frac{1}{2}(bc+cd)$ । अतः जोड़ने पर, $2S < 1/2$ (ad + bc + ab + cd) यानी, $S < (a + c)(b + d) / 4$

$\therefore \left(\frac{a+c}{2}\right) \cdot \left(\frac{b+c}{2}\right) >$ वास्तविक क्षेत्रफल।

इससे स्पष्ट है कि प्राचीन मिस्र देश के पदाधिकारी सूत्र(5) के आधार पर क्षेत्रफल निकालकर लगान और कर वसूली में वहाँ के किसानों का शोषण करते थे ।

चित्र 2.8 या 2.9 में बने नगाड़े के ऊर्ध्व खण्ड या काट (Section) के क्षेत्रफल के लिये चीन में *वूत्शाओ सुआन चिंग* (Wu Tshao Suan Ching) ग्रन्थ में सूत्र इस प्रकार है–

$$\text{क्षेत्रफल} = \frac{1}{3}(a+b+c)h \qquad (11)$$

स्पष्ट रूप से यह *a,b,c* का औसत लेकर प्रभावकारी (effective) लम्बाई निकालने के प्रयत्न पर निर्भर है। लेकिन सूत्र सही नहीं है। सही सूत्र ऊपर और नीचे के दोनों समलम्ब चतुर्भुजों का अलग-अलग क्षेत्रफल का योग लेने से प्राप्त होगा। अर्थात्

$$\text{सही क्षेत्रफल} = \left(\frac{a+b}{2}\right) \cdot \frac{h}{2} + \left(\frac{b+c}{2}\right) \cdot \frac{h}{2}$$

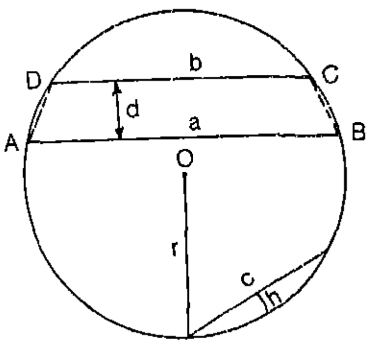
$$= \frac{(a+2b+c) \cdot h}{4} \qquad (12)$$

इसका प्राप्त करना ई. चौथी शताब्दी चीन में कठिन नहीं था। लेकिन मालूम पड़ता है कि सीधे औसत लेकर सरल सूत्र निकालना उन्हें ज्यादा रुचिकर लगा। आसानी औसत का एक बड़ा लुभावना गुण है जिसके कारण लोग सूक्ष्मता को भी भूल जाते हैं। विवश होकर औसत का सहारा लेना अलग बात है।

वृत्त की दो समानान्तर (केन्द्र से एक ही तरफ) जीवाओं के बीच बने वृत्तखण्ड के क्षेत्रफल पर विचार करते हैं। विकसित त्रिकोणमिति के प्रयोग के बिना उसका क्षेत्रफल का सही मान निकालना कठिन है। जिनभद्र गणी ने ई. सन् 600 के आसपास निम्नलिखित दो व्यावहारिक सूत्र दिये हैं।

(i) क्षेत्रफल $= \frac{1}{2}(a+b).d$ (13)

(ii) क्षेत्रफल $= \sqrt{\frac{1}{2}(a^2+b^2)}\,.d$ (14)



चित्र 2.10

सही यानी शुद्ध कोई नहीं है, और स्पष्ट है कि दोनों ही औसत विधि पर आधारित हैं।

सूत्र (i) ज्यामितीय दृष्टि से वृत्तखंड को समलम्ब चतुर्भुज ABCD के समान मान लेने से भी लिखा जा सकता है।

दूसरा सूत्र अधिक अच्छा है और इसी को जिनभद्र ने प्राथमिकता दी है। इसकी रहस्यमय उपपत्ति प्राचीन काल से ज्ञात सूत्र $C^2 = 4h(2r-h)$ पर आधारित है।

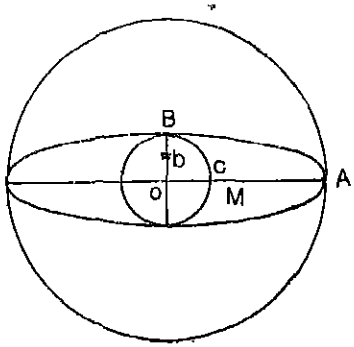
2a बड़ी और 2b छोटी अक्ष वाले दीर्घ वृत्त (ellipse) के लिये एक प्राचीन सूत्र

क्षेत्रफल $= \pi\left(\frac{a+b}{2}\right)^2$ (15)

का आधार भी औसत की क्रिया है। यदि M बिंदु C और A के ठीक मध्य में हो, तो $OM = (a+b)/2$ होगा। इसको त्रिज्या मान कर खींचे गये वृत्त के क्षेत्रफल को दीर्घ वृत्त के क्षेत्रफल के समान समझना सूत्र (15) में निहित है।

औसत लेकर एक अन्य सरल सूत्र भी हो सकता है

क्षेत्रफल $= \pi\left(\frac{a^2+b^2}{2}\right)$ (16)



चित्र 2.11

जिसका मतलब है चित्र में बने सबसे छोटे और सबसे बड़े वृत्तों के क्षेत्र-मानों के औसत को दीर्घ वृत्त के क्षेत्रफल के बराबर मान लेना है। शुद्ध सूत्र है,

क्षेत्रफल $= \pi ab$ (17)

इसे लंब प्रक्षेप (orthographic projection) द्वारा बड़ी सरलता से सिद्ध किया जा सकता है। बेलन (cylinder) का व्यास 2b है, और तिरछी रेखा $PT = 2a$; इस प्रकार तिरछे तल के झुकाव के लिये

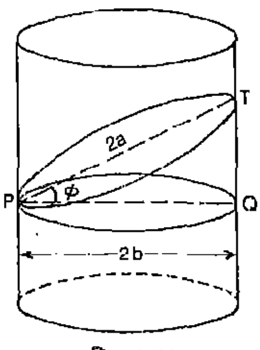
$$\cos\theta = PQ/PT = b/a$$

बेलन का तिरछे खंड या काट (Oblique section) दीर्घवृत्त है, और क्षैतिज तल पर उसका लंब प्रक्षेप वृत्त है। यदि दीर्घवृत का क्षेत्रफल A हो तो,

$$A\cdot\cos\theta = \pi b^2$$

जिसमें $\cos\theta$ का मान बैठाने से सूत्र (17) आ जायेगा। दीर्घवृत्त की परिधि के लिये केपलर (Kepler 1609 ई०) ने औसत लगाकर

$$p = \frac{2\pi a + 2\pi b}{2} = \pi(a+b)$$



चित्र 2.12

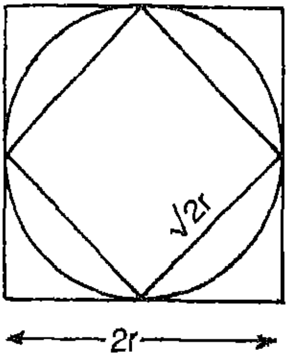
निकाला। सही मान कठिन आधुनिक अवकलन से ही निकलता है और वह भी उच्च फलन या अनन्त श्रेणी में।

वृत्त की परिधि को उसमें बने सबसे बड़े षड्भुज की परिधि के बराबर ले लेने पर

$2\pi r = 6r$ अर्थात्, $\pi = 3$ स्थूल मान आता है, जिसमें वृत्त का क्षेत्रफल

$$A = 3r^2 \quad (18)$$

वैसे इस स्थूल सूत्र को कुछ विद्वानों ने औसत की



चित्र 2.13

विधि से प्राप्त करना ज्यादा अच्छा समझा है जो प्राचीन काल के लिए एक स्वाभाविक कल्पना है।

वृत्त से स्पर्श करते हुए उसके बाहर और भीतर बने एक केन्द्रित वर्गों का क्षेत्रफल क्रमशः $4r^2$ तथा $2r^2$ होगा। इनका औसत लेने पर $A = (4r^2 + 2r^2)/2 = 3r^2$.

आपको सुनकर आश्चर्य होगा कि ठीक इसी विधि से जर्मनी के एक (अव्यवसायी) गणितज्ञ ने $\pi=3$ को सन् 1840 में *प्राप्त किया जबकि दुनिया इस विषय में बहुत आगे निकल* चुकी थी। π के कुछ अन्य प्राचीन मान जैसे $\sqrt{10}$, 355/115 इत्यादि, औसत लगाकर भी निकाले जा सकते हैं। उदाहरण के लिए यदि चित्र 2.13 में बड़े वर्ग का क्षेत्रफल S_1 हो और अन्दर के छोटे वर्ग का क्षेत्रफल S_2 हो, तो वृत्त के क्षेत्रफल A के लिये हम वर्गों के औसत का मूल (root mean square) लगाते हैं, अर्थात्

$$A^2 = (S_1^2 + S_2^2)/2$$

इससे $$\pi^2 r^4 = (16r^4 + 4r^4)/2$$

यानी $$\pi = \sqrt{10}$$

प्राप्त हो जाता है। यह स्थूल मान जैन ग्रन्थों में *प्रचुरता से मिलता है।*

वक्र पृष्ठ और आयतन

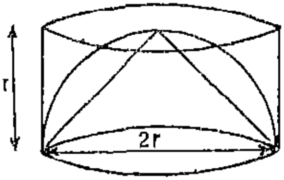
मिस्रीय (Egyptian) गणित की प्रसिद्ध पुस्तक *आहमोस पैपिरस* का उल्लेख हम कर चुके हैं। उस विषय की, परन्तु उससे भी पुरानी है एक दूसरी पैपिरस जिसे *मास्को गणितीय पैपिरस* (ई० पू० लगभग 1830) कहते हैं। उसमें एक प्रश्न एक ऐसी टोकरी का वक्र पृष्ठ निकालने पर है जिसकी आकृति गोलार्ध थी या कपाल से मिलती-जुलती है। कुछ विद्वानों की राय में उस समय के मिस्रवासियों को गोलार्ध के वक्र पृष्ठ का सही सूत्र मालूम

था जो इस प्रकार है।

$S = 2\pi r^2$

लेकिन इस मत को मानना बड़ा मुश्किल है। क्योंकि इतने अतीत काल में अर्धगोलीय पृष्ठ के शुद्ध सूत्र का ज्ञान अविश्वसनीय लगता है। लेकिन हो सकता है कि मिस्रवासियों ने सूत्र (19) की प्राप्ति औसत की किसी सरल विधि से की हो। उस स्थिति में न आश्चर्य की जरूरत है और न अविश्वास की। एक प्राचीन गणित के इतिहास ने सूत्र (19) को प्राप्त करने की यह रीति सुझाई है।

चित्र 2.14 में आधार (base) वृत्त का क्षेत्रफल πr^2 है और परिगत (Circumscribed) बेलनाकार टोपी का क्षेत्रफल



चित्र 2.14

= उसका वक्र पृष्ठ + ऊपरी सतह

$= 2\pi r.r + \pi r^2 = 3\pi r^2$

आधार वृत्त और टोपी की सतह का औसत लेने से, गोलार्ध के वक्र पृष्ठ और आधार वृत्त का

$$\text{क्षेत्रफल} = \frac{\pi r^2 + 3\pi r^2}{2} = 2\pi r^2$$

और यही शुद्ध मान है।

इस प्रकार हो सकता है कि लगभग 4000 वर्ष पूर्व मिस्रीय लोगों ने इसी रीति से सूत्र (19) प्राप्त किया हो। उसमें कोई उच्च गणितीय क्षमता का होना जरूरी नहीं है।

रोचक बात तो यह है कि इसी तरह के अन्य सरल औसत से ठोस गोलार्ध के आयतन का भी शुद्ध सूत्र मिल जाता है। मिस्र पिरामिडों का देश कहलाता है। वास्तव में पिरामिड उनकी संस्कृति के एक अभिन्न अंग थे। उन पर उनको ध्यान देना स्वाभाविक ही नहीं आवश्यक भी था। परिणाम यह हुआ कि आज से 5000 वर्ष पहले ही उन्हें वर्गाकार पिरामिडों के छिन्नक (frustum) के आयतन का भी सही सूत्र ज्ञात था। तो फिर वर्गाकार सूची स्तम्भ और शंकु के आयतनों में कठिनाई की कोई बात ही नहीं।

गोलार्ध के परिगत बेलन का आयतन πr^3 और अन्तर्गत शंकु का आयतन $= \frac{1}{3}\pi r^3$

इनका औसत होगा $=\frac{2\pi r^3}{3}$

जोकि गोलार्ध के आयतन का शुद्धमान है। दैवयोग से फिर भाग्य ने साथ दे दिया।

मनोरंजक बात तो यह है कि गोले के आयतन के लिये प्रचलित एक प्राचीन स्थूल सूत्र की प्राप्ति भी इसी तरह हो जाती है, यदि शंकु के शुद्धमान के स्थान पर इसके स्थूल मान का प्रयोग किया जाए। शंकु के आयतन के लिये एक बहुत ही स्थूल (या गलत) सूत्र था

$$V=\left(\frac{1}{2}\right)\pi r^2 h \qquad (20)$$

ई. 12वीं सदी के मैमोनिडेस (Maimonides) ने उन लोगों का उल्लेख किया है जो सूत्र (20) पर विश्वास करते थे। भारत में आर्यभट प्रथम ने भी त्रिभुजाकार सूची स्तंभ के आयतन के लिए (1/2)Ah सूत्र दिया है, जबकि सही सूत्र (1/3) Ah है। यहाँ A= आधार का क्षेत्रफल।

इसको लगाकर यदि अन्तर्गत शंकु और परिगत बेलन के आयतनों का औसत होगा,

$$\frac{1}{2}\left(\pi\frac{1}{2}r^3+\pi r^3\right)=\left(\frac{3}{4}\right)\pi r^3$$

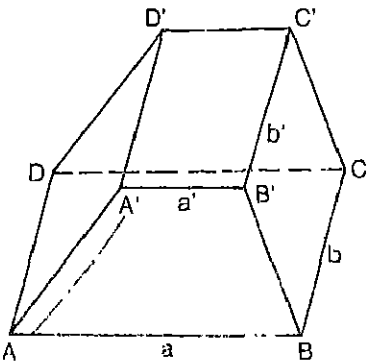
जो कि गोलार्ध के आयतन के लिए एक स्थूल सूत्र है। अब यदि π का भी स्थूल मान 3 लिया जाए तो पूरे गोले के आयतन के लिए हमें

$$V'=\frac{9}{2}r^3 \qquad (21)$$

स्थूल सूत्र प्राप्त होता है।

रोचक बात तो यह है कि चीन के ई. प्रथम शताब्दी के प्रसिद्ध ग्रन्थ *च्यू चांग सुआन शू* (Chiu Chang Suan Shu) में सूत्र (21) का प्रयोग हुआ है। भारत में भी इसका उल्लेख भास्कर प्रथम (सन् 629) ने किया है। जैन गणित में तो यह बहुत लोकप्रिय था जैसा कि महावीर, नेमिचंद्र और ठक्कुर फेरू के ग्रन्थों से पता चलता है।

अब हम छिन्नकों और उनसे मिलते-जुलते ठोसों के आयतनों की चर्चा करते हैं। पहले



चित्र 2.15

एक ऐसे ठोस पर ध्यान दें जिसका आधार, ABCD एक आयत (भुजाएँ a,b) है और शिखर A'B'C'D' एक समानान्तर आयत (भुजाएँ a', b') है। साथ ही ऊपर नीचे की भुजाएँ क्रमशः एक दूसरे के समानान्तर हैं, तथा जिसके चारों फलकों (ABB'A' इत्यादि) की आकृति समलम्ब चतुर्भुज होगी। माना कि ठोस की खड़ी ऊँचाई आर्थात् आधार और शिखर के बीच की कम से कम दूरी h है। आयतन के निम्नलिखित दो प्राचीन नियम औसत पर आधारित हैं।

$$V_1 = \frac{1}{2}\left[ab + a'b'\right].h \qquad (22)$$

और $V_2 = \frac{1}{2}(a+a').\frac{1}{2}(b+b').h \qquad (23)$

प्रसिद्ध भारतीय गणित इतिहासज्ञ विभूति भूषण दत्त (जो संन्यास के बाद स्वामी विद्यारण्य कहलाये) के अनुसार सूत्र 23 का उपयोग शुल्बसूत्रों में किया गया था। वर्गाकार छिन्नक के लिये दोनों ही सूत्र बेबिलोन में प्रयोग किए गए।
शंकु के छिन्नक के लिये उपर्युक्त सूत्र निम्न रूप धारण करेंगे।

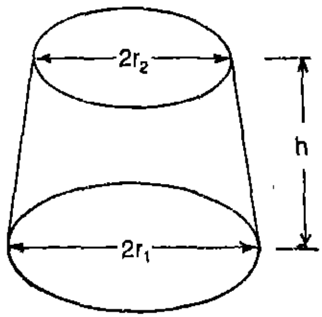
$$V_1=(\pi/2)\,(r_1^{\,2}+r_2^{\,2}).h \qquad (24)$$

$$V_2 = (\pi/4)\,(r_1 + r_2)^2.h \qquad (25)$$

सूत्र (24) से मिलते-जुलते नियम का उपयोग बेबिलोनियन गणित में और (25) का बाद के ्निसीय गणित में, π का मान 3 लेकर। यूनानी गणितज्ञ हीरॉन ने भी सूत्र (25) का प्रयोग किया है। यदि पिरेमिड को हम एक ऐसा छिन्नक समझें जिसका शिखर एक बिंदु हो (अर्थात् शिखर का क्षेत्रफल शून्य हो), तो पिरेमिड या शंकु के आयतन के लिए हमें (22) और (24) से सूत्र

आयतन (Vol) = $\frac{1}{2}$ (आधार का क्षेत्रफल) x ऊंचाई (26)

प्राप्त हो जाएगा जिसके विषय में हम ऊपर चर्चा कर चुके हैं ।



चित्र 2.16

यह याद रखना चाहिए कि अशुद्ध सूत्र (26) को ऊंचाई के बीचों बीच का खंडतल लेकर प्राप्त नहीं किया जा सकता जैसा कि कुछ लोग समझते हैं। केवल आधार और शिखर तक सीमित न रहकर, हम ठोस के और भी अनेक अन्य खण्डतल लेकर औसत की विधि लगा सकते हैं। भारत में इस तरह का एक बहुत सुंदर व्यापक सिद्धांत महावीराचार्य (ई० सन् 850 के लगभग) ने अपने *गणितसार संग्रह* में दिया है। मूलतः यह ब्रह्मगुप्त (ई. 628) के नियम पर आधारित था जिसमें केवल आधार और शिखर का ही विचार किया गया था। क्षेत्रफल को हम उसके अनुरेख आयामों के फलन के रूप में f(a, b, c,.......) से निरूपित करते हैं।

महावीराचार्य के अनुसार

$$V_1 = h\,[\,f(a_1, b_1, c_1, \ldots..) + f(a_2, b_2, c_2, \ldots..) + \ldots\ldots\,]\,/\,n$$

$$V_2 = hf\left\{\left(\frac{a_1 + a_2 + \ldots..}{n}\right), \left(\frac{b_1 + b_2 + \ldots..}{n}\right), \ldots..\right\}$$

इनसे आयतन

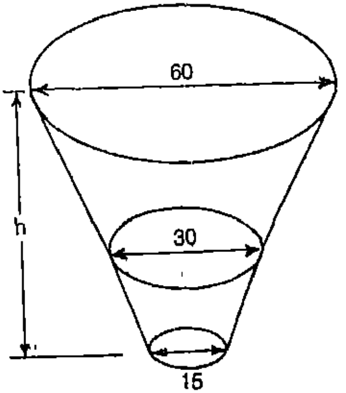
$$V = (\alpha V_1 + \beta V_2)/(\alpha + \beta) \ldots\ldots \quad (27)$$

जो कि एक भारित माध्य (weighted average) है (महावीर के मान थे $\alpha=1, \beta=2$)

उदाहरण

महावीर के दिए अनेक उदाहरणों में से एक कुएँ पर है जिसके ऊपरी, बीच और नीचे के वृत्तीय खंडों (sections) के व्यास 60, 30 और 15 तथा गहराई 16 है।

यहाँ



चित्र 2.17

$$V_1 = \frac{\pi}{4}\left(\frac{60^2+30^2+15^2}{3}\right) \times 16 = 6300\pi$$

$$V_2 = \frac{\pi}{4}\left(\frac{60+30+15}{3}\right)^2 \times 16 = 4900\pi$$

$V = (V_1 + 2V_2)/3 = 16100\pi/3$ उत्तर।

सही (सूक्ष्म) मान ऊपर और नीचे के दो भागों का अलग-अलग आयतन शंकु के छिन्नक की विधि से निकालकर जोड़ने से आयेगा, सूत्र है,

$$\pi(D_1^2 + D_2^2 + D_1D_2)h/12$$

यहाँ ऊपरी भाग का आयतन $= \frac{\pi 8}{12} \quad (60^2 + 30^2 + 60 \times 30)$

$= 4200\pi$

तथा नीचे भाग के लिये आयतन $= \frac{\pi 8}{12} \quad (30^2 + 15^2 + 30 \times 15)$

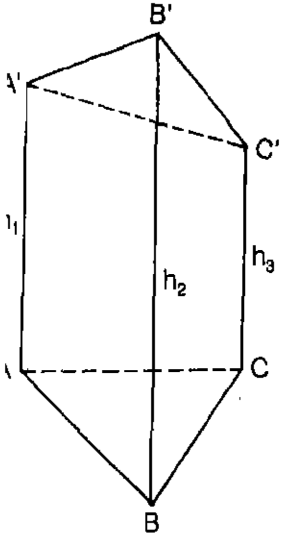
$= 1050\pi$

अत: सही आयतन 5250π होगा।

अब एक ध्यान देने योग्य बात बतलाते हैं । यदि केवल ऊपर (top) और आधार (base) के दो काट या खण्ड (section) लिए जाएँ, तो महावीर का सूत्र वही हो जाएगा जो 200 वर्ष पूर्व ब्रह्मगुप्त ने प्रतिपादित किया था। यदि वृत्ताकार या आयताकार पिरेमिडों के छिन्नकों (frusta) के आयतन ब्रह्मगुप्त के सूत्र से निकाले जाएँ तो वे एकदम सही आते हैं। कुछ अन्य ठोसों के साथ भी ऐसा ही है।

आयतन संबंधी नियमों के लिए औसत विधि के प्रयोग में प्राचीन चीन भी कम नहीं था। उदाहरण के लिए खण्डित त्रिभुजाकार स्तंभ के लिए आयतन = (आधार) $\times (h_1 + h_2 + h_3)/3$

स्पष्टतया औसत ऊँचाई लेकर लिखा गया है। किंतु यूरोपीय गणितज्ञ ए. एम. लीजेन्द्र



चित्र 2.18

(Legendre) ने ई. सन् 1794 में इसे शुद्ध सिद्ध किया। एक दूसरे औसत पर आधारित चीनी सूत्र था,

$$V = \frac{1}{2}\left(\frac{a+a'}{2}+\frac{b+b'}{2}\right)\left(\frac{h+h'}{2}\right)d$$

जिसे लगाकर उस ठोस का आयतन निकाला जाता था जिसके d दूरी स्थित सिरे समलंब चतुर्भुज थे। एक ओर भुजाएँ और ऊंचाई a, b तथा h तो दूसरी ओर a', b' तथा h' थीं।

विविध

यदि N एक अवर्ग परिमेय संख्या हो तो उसके वर्गमूल के लिए हम इस प्रकार लिख सकते हैं। $\sqrt{N} = \sqrt{a^2 + b}$, जहाँ $0 < b < 2a+1$ (28)

चूँकि $a^2 + b = (a + \frac{b}{2a})^2 - \frac{b^2}{4a^2}$

इसलिए $\sqrt{N} = \sqrt{a^2 + b} = a + \frac{b}{2a}$ लगभग (29)

जो कि प्राचीन काल में एक सामान्य सूत्र था।

अब माना कि

$$f = \sqrt{a^2 + x}$$

यदि x शून्य है तो f का मान a और यदि x, (2a + 1) है तो f का मान (a + 1) होगा।

अर्थात् f में औसत वृद्धि $\frac{1}{(2a+1)}$ प्रति इकाई x की दर से होगी ।

अतः x को b लेने पर

$$\sqrt{N} = \sqrt{a^2 + b} = a + \frac{b}{2a+1} \text{ लगभग} \quad (30)$$

जो प्राचीन में प्रचलित एक अन्य सरल सूत्र था। सूत्र (29) से वास्तविक मान से ज्यादा और (30) से वास्तविक मान से कम वर्गमूल आता है। अतः कभी-कभी दोनों का औसत लेने से एक अच्छा मान प्राप्त हो जाता है, अर्थात् एक नया आसन्न सूत्र मिला

$$\sqrt{a^2 + b} = a + \frac{1}{2}\left[\frac{b}{2a} + \frac{b}{(2a+1)}\right] \quad (31)$$

सच पूछो तो यदि $\sqrt{N}$ का कोई भी स्थूल मान α हो तो $\frac{N}{\alpha}$ एक दूसरा स्थूल मान होगा। अतः औसत लेकर

$$\sqrt{N} = \frac{1}{2}\left(\alpha + \frac{N}{\alpha}\right) \quad (32)$$

जिसे हीरॉन का नियम कहते हैं। इसको बार-बार लगाने से तुरंत अच्छे परिणाम मिल पाते हैं।

उदाहरण के लिए $\sqrt{2}$ निकालने के लिए इसका एक स्थूल मान $\frac{3}{2}$ लिया। अतः (32) से और अच्छा मान होगा।

$$\sqrt{2} = \frac{1}{2}\left(\frac{3}{2} + \frac{4}{3}\right) = \frac{17}{12}$$

अब यदि $\alpha = \frac{17}{12}$ हो तो (32) से ही

$$\sqrt{2} = \frac{1}{2}\left(\frac{17}{12} + \frac{24}{17}\right) = \frac{577}{408}$$

जो कि शुल्ब सूत्रों वाला काफी अच्छा मान है । वर्गमूल के संबंध में एक और औसत का प्रयोग देखिये। माना कि

$$\sqrt{a^2 + b} = a + \frac{b}{2a+c} \quad (33)$$

इसमें C=0 लेने पर सही से अधिक और C=1 लेने पर सही से कम मान मिलता है। अतः C का औसत मान $\frac{1}{2}$ लेते हैं जिससे एक नया सूत्र

$$\sqrt{a^2+b} = a + \frac{2b}{4a+1} \qquad (34)$$

अरब लेखक अल-युक्लीदिसी (ई. 10 वीं सदी) ने इसे अपने अंकगणितीय ग्रन्थ में दिया है।

गणित के इतिहास में अनन्त श्रेणी,

$$S = 1-1+1-1+1-1+1-1+\ldots\ldots \qquad (35)$$

के बारे में अनेक मनोरंजक बातें मिलती हैं। उसे दो प्रकार लिखकर के अलग-अलग मान प्राप्त किए गए।

$$\begin{aligned} S &= (1-1)+(1-1)+(1-1)+(1-1)+\ldots\ldots\ldots \\ &= 0+0+0+0+\ldots\ldots\ldots = 0 \end{aligned}$$

और

$$\begin{aligned} S &= 1+(-1+1)+(-1+1)+(-1+1)+\ldots\ldots \\ &= 1+0+0+0+\ldots\ldots\ldots = 1 \end{aligned}$$

अतः औसत के आकर्षण से, S का मान $\frac{1}{2}$ समझा गया जिसे सीधे (35) से भी तीसरी तरह से लिखकर इस प्रकार निकाला जा सकता है।

$$\begin{aligned} S &= 1-(1-1)-(1-1)-(1-1)\ \ldots\ldots \\ &= 1-S \end{aligned}$$

या $2S = 1$

$\Rightarrow S = 1/2$

अन्त में एक मूल प्रश्न पर विचार करेंगे कि औसत निकालने में सामान्यतया समानान्तर माध्य (arithmetic mean) का ही प्रयोग क्यों किया जाता है, अन्य माध्यों का क्यों नहीं। सरलता के अतिरिक्त क्या इसका कोई सैद्धांतिक आधार है। जी हाँ, अवश्य। इस सिद्धांत का नाम है।

"न्यूनतम वर्गों की विधि"

(Method of Least squares)

इसके अनुसार यदि किसी माप m के विभिन्न मान $m_1, m_2, m_3, \ldots\ldots m_n$ प्राप्त किए गए हैं या कहीं से उपलब्ध हैं, तो m का वह मान ही सबसे बढ़िया होगा, जिससे

$$E = (m-m_1)^2 + (m-m_2)^2 + \ldots\ldots + (m-m_n)^2 \quad (36)$$

का मान सबसे कम होगा। इस राशि को इस प्रकार भी लिखा जा सकता है ।

$$E = n\left[m - \left(\frac{m_1+m_2+\ldots\ldots+m_n}{n}\right)\right]^2 + \left\{(m_1^2+m_2^2+\ldots\ldots) - \frac{(m_1+m_2+\ldots)^2}{n}\right\}$$

जिससे स्पष्ट है कि इसका न्यूनतम मान तभी होगा जब

$$m = (m_1 + m_2 + \ldots\ldots + m_n)/n \quad (37)$$

अर्थात् उपलब्ध मानों का औसत।

एक अन्य प्रकार से हम (36) को इस प्रकार निरूपित कर सकते हैं।

$$E = nm^2 - 2Bm + C$$

$$= n\left(m - \frac{B}{n}\right)^2 + C - \frac{B^2}{n} \quad (38)$$

जहाँ $B = m_1 + m_2 + m_3 + \ldots\ldots + m_n$

तथा $C = m_1^2 + m_2^2 + \ldots\ldots + m_n^2$

अब (38) से स्पष्ट है कि E का न्यूनतम मान $(Cn-B^2)/n$ है, जब $m = B/n$, अर्थात् वही जो (37) में है।

अध्याय 3

चक्रीय चतुर्भुज के तृतीय कर्ण की खोज

स्वामी विवेकानन्द ने कहा था कि "ईश्वर एक वृत्त (circle) है जिसका केन्द्र (centre) प्रत्येक स्थान पर है और परिधि कहीं नहीं।"

वृत्त या चक्र को ईश्वर का प्रतिनिधित्व करनेवाला संकेत मानने की प्रथा अनेक प्राचीन सभ्यताओं में प्रचलित थी। इसका एक कारण यह भी था कि वृत्त का न आदि है और न अन्त और ईश्वर को भी अनादि तथा अनन्त माना गया है। कभी-कभी ईश्वर को केन्द्र और चक्र को सृष्टि समझा जाता है, तथा यह कहा जाता है कि जिस प्रकार चक्र के प्रत्येक बिन्दु की दूरी केन्द्र से बराबर है, उसी प्रकार सृष्टि का प्रत्येक जीव ईश्वर की दृष्टि में समान है। ऊंच-नीच का भेद मनुष्य की अपनी खोज है। ईश्वर के परिपूर्ण होने की बात भी वृत्तीय संकेत में निहित है।

ब्रह्माण्ड को प्रकाश चक्र से निरूपित करने का चलन प्राचीन मिस्र देश में था। भारत में प्राचीन वैदिक काल से आकाश (sky) को सूचित करने वाले शब्द, जैसे खम्, व्योम, इत्यादि बाद में शून्य (zero) के लिये प्रयुक्त हुए जिसे एक छोटे से वृत्त से निरूपित किया जाता है।

देखने में अधिकतर आकाशीय पिण्ड वृत्त में घूमते हुए नज़र आते हैं। प्राचीन ज्योतिष

में भी सूर्य, चन्द्र और ग्रहों की प्रत्यक्ष कक्षाएँ वृत्ताकार ली गई हैं। अतः खगोल शास्त्रीय अध्ययन में आकाशीय पिण्डों की स्थितियों को हवाला या निर्देश वृत्त पर दर्शाना जरूरी था। इस प्रकार वृत्त में तीन बिन्दुओं से त्रिभुज और चार बिन्दुओं से बने चक्रीय (cyclic) चतुर्भुज के अध्ययन को ज्योतिष से प्रेरणा मिली।

वैसे वृत्त के बिना या उससे कोई मतलब न रखे हुए भी तीन भुजाओं से बने त्रिभुज, चार से चतुर्भुज इत्यादि बहुभुजीय क्षेत्रों का अध्ययन भारत में अति प्राचीन समय से होता आ रहा है। इनमें त्रिभुज तो हमेशा चक्रीय होता है। यानी हम हमेशा एक ऐसा वृत्त खींच सकते हैं जो किसी भी दिए हुए त्रिभुज के तीनों शीर्षों से होकर जाएगा। लेकिन अधिक भुजाओं वाले बहुभुजों (polygons) के साथ ऐसा हमेशा संभव नहीं है। चतुर्भुजों में वर्ग, आयत तथा द्विसम समलम्ब चतुर्भुज (Isosceles trapezium) तो हमेशा चक्रीय होते हैं। अन्य तरह के चतुर्भुज विशेष परिस्थितियों में ही चक्रीय होते हैं। प्राचीन भारतीय ज्यामिति में व्यापक समचतुर्भुज (rhombus) और समानान्तर चतुर्भुज (parallelogram) पर विशेष ध्यान नहीं दिया गया क्योंकि इनका उपयोग कम होता था। उभयतः प्रउगचिति का आकार अवश्य समचतुर्भुज था, परन्तु उसे दो त्रिभुजों (प्रउग) से बनाया गया था।

चक्रीय चतुर्भुज का क्षेत्रफल

किसी भी चक्रीय चतुर्भुज के लिए ब्रह्मगुप्त अपने *ब्राह्मस्फुट सिद्धांत* (XII, 21 उत्तरार्ध) में क्षेत्रफल सम्बन्धी नियम इस प्रकार देते हैं–

भुजयोगार्धं चतुष्टय-भुजोन घातात् पदं सूक्ष्मम् ।।

अर्थात्

"भुजाओं के योग के आधे को चार जगह रखकर उनमें से क्रमशः भुजाओं को घटाओ। बची हुई चार राशियों के गुणनफल का वर्गमूल चतुर्भुज का सूक्ष्म क्षेत्रफल होगा।"

अर्थात्

क्षेत्रफल $S = \sqrt{(s-a)(s-b)(s-c)(s-d)}$ (1)

जहां भुजयोगार्ध (Semi perimeter)

$$s = \frac{a+b+c+d}{2} \tag{2}$$

सूत्र (1) चक्रीय चतुर्भुजों के लिए बिल्कुल शुद्ध है। *ब्राह्मस्फुट सिद्धांत* का लेखन काल ई. सन् 628 है, और इसके पूर्व सूत्र (1) किसी अन्य ग्रन्थ में नहीं मिलता। इस प्रकार भारत के ब्रह्मगुप्त विश्व के प्रथम गणितज्ञ हैं, जिन्होंने इस सूत्र का प्रतिपादन किया। प्रसिद्ध गणित इतिहासज्ञ कार्ल बी. बॉयर (Carl Boyer) के अनुसार सूत्र (1) "शायद ब्रह्मगुप्त के कृतित्व में सबसे सुंदर नियम है।"

भाषा प्रेमी उनकी संक्षिप्त शैली पर भी ध्यान दें।

उदाहरण : उस चक्रीय चतुर्भुज का क्षेत्रफल निकालो जिसकी भुजायें 25,39, 60 और 52 हैं।

यहां $s = \frac{25+39+60+52}{2} = \frac{176}{2} = 88$

क्षेत्रफल $= \sqrt{(88-25)(88-39)(88-60)(88-52)}$

$= \sqrt{63 \times 49 \times 28 \times 36}$

$= 1764$.

आचार्य ब्रह्मगुप्त को सूत्र (1) के लिए श्रेय अवश्य दिया जाता है, लेकिन साथ में विद्वानों की एक शिकायत भी है। वह यह कि ब्रह्मगुप्त ने स्पष्ट रूप से यह नहीं लिखा कि सूत्र (1) केवल चक्रीय चतुर्भुज के लिये सूक्ष्म है, अन्य के लिए नहीं। इसका समाधान यही है कि स्थिति "सूक्ष्म" शब्द में निहित है। अन्यथा केवल चार भुजाएं देने से चतुर्भुज निर्धारित नहीं होता और उसका क्षेत्रफल शून्य से लेकर एक सीमा तक कुछ भी हो सकता है। अतः ऐसी स्थिति में सूक्ष्म क्षेत्रफल का तो क्या, किसी स्थूल मान का भी प्रश्न गम्भीरता से नहीं उठता।

ब्रह्मगुप्त के बाद सूत्र (1) को श्रीधर ने अपनी *त्रिशतिका* में, महावीर ने अपने

गणित सार संग्रह में और श्रीपति ने *सिद्धांत शेखर* में दिया है। महावीर ने यह स्पष्ट किया है कि व्यापक चतुर्भुज के लिये सूत्र (1) सूक्ष्म नही है। यूरोप में सूत्र (1) प्रथम बार डब्ल्यू स्नैल (W. Snell) ने सन् 1619 में अपने द्वारा सम्पादित लुडोल्फ वान क्यूलेन (Ludolphe Van Ceulen) के एक ग्रन्थ की टीका में दिया। भारत में वह सूत्र 1000 वर्ष पहले ज्ञात था। व्यापक चतुर्भुज के क्षेत्रफल के लिए कोई भी सूत्र केवल चार भुजाओं पर आधारित नहीं हो सकता। उसमें कम से कम एक अन्य प्राचल (Parameter) होना चाहिए। जैसे एक बढ़िया सूत्र है–

$$S = \sqrt{(s-a)(s-b)(s-c)(s-d) - abcd\ \cos^2\theta} \qquad (3)$$

जहां θ चतुर्भुज के दो सन्मुख कोणों का अर्धयोग है। इस सूत्र से स्पष्ट है कि दी हुई भुजाओं से बना चतुर्भुज का क्षेत्रफल अधिकतम (greatest) तब होगा जब θ का मान 90° हो (यानी $\cos\theta = 0$)। इस दशा में चतुर्भुज चक्रीय हो जायेगा। हम जानते हैं कि चक्रीय चतुर्भुज में दो सन्मुख कोणों का योग 180° होता है अर्थात् $\theta=90^\circ$

तब यह सूत्र ब्रह्मगुप्त के सूत्र (1) के समान हो जायेगा।

अतः दी हुई चार भुजाओं से सबसे बड़े क्षेत्रफल का चतुर्भुज वही होगा जो चक्रीय है। याद रखें कि दी हुई चार भुजायें ऐसी होनी चाहिए कि प्रत्येक भुजा अन्य तीन भुजाओं के योग से कम हो अन्यथा चतुर्भुज बनाना संभव नहीं होगा।

अब बताओ कि निश्चित घेरे वाले समचतुर्भुज (rhombus) खेतों में वर्गाकार (Square) खेत को चुनना क्या लाभप्रद होगा।

ब्रह्मगुप्त ने अपने सूत्र को कैसे प्राप्त किया था, यह कुछ भी ज्ञात नहीं है। प्राचीन काल में बहुत सी बातें आचार्य शिष्यों को अलग से समझा देते थे।

चक्रीय चतुर्भुज के कर्ण

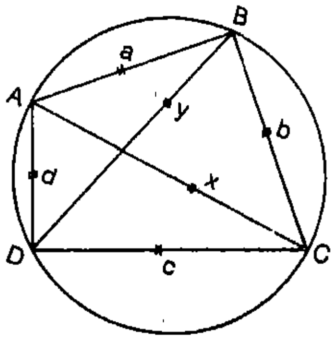
ब्रह्मगुप्त की ज्यामिति के क्षेत्र में एक और महान् उपलब्धि थी उनका चक्रीय चतुर्भुज

के कर्णों का मान निकाल लेना। इसके लिये ब्राह्मस्फुट सिद्धांत का श्लोक (XII,.28) इस प्रकार है–

"कर्णाश्रित भुजधाततैक्यमुभयथान्योन्यभाजितं गुणयेत् ।
योगेन भुजप्रतिभुजवधयोः कर्णौ पदे विषमे ।।

अर्थात्

दोनों कर्णों के किनारों पर मिलने वाली भुजाओं को अलग-अलग गुणनफल के योगों को एक दूसरे से विभाजित करो, और आमने सामने की भुजाओं के योग में (प्रत्येक भागफल को) गुणा करो। गुणनफलों के वर्गमूल विषम (चक्रीय) चतुर्भुज के दो कर्ण होते हैं ।



चित्र 3.1

(देखें चित्र 3.1) । कर्ण AC के A कोने पर भुजाएं AB(=a) और AD(=d) तथा C कोने पर BC(=b) तथा CD(=c) आश्रय ले रही हैं या मिल रही हैं।

इनके गुणनफल का योग हुआ (ad+bc) जिसको "घातैक्य" की संज्ञा दी गई है। इसी प्रकार BD कर्ण पर आश्रय लेने वाली भुजाओं के गुणनफल का योग हुआ (ab+cd) । आमने-सामने की भुजाओं का "घातैक्य" होगा (ac+bd) । ब्रह्मगुप्त के नियम के अनुसार

$$\text{कर्ण}\ \ AC = \sqrt{\frac{ad+bc}{ab+cd} \times (ac+bd)} \qquad (4)$$

तथा

$$\text{कर्ण}\ \ BD = \sqrt{\frac{ab+cd}{ad+bc} \times (ac+bd)} \qquad (5)$$

यह दोनों सूत्र भी पूर्णतया या एकदम ठीक हैं, और गणितीय दृष्टि से सुन्दर। उससे भी सुंदर है ब्रह्मगुप्त की संक्षिप्त शैली। बिना किसी गणितीय संकेतों (symbols) के प्रयोग

के इतने जटिल सूत्रों को उन्होंने इतने कम शब्दों में वर्णन कर दिया। केवल तीन "घातैक्यों" की मदद से उनको याद रखा जा सकता है।

एक आधुनिक गणित के इतिहासज्ञ हावार्ड ईव्स (Howard Eyes) के शब्दों में सूत्र (4) और (5) "भारतीय ज्यामिति के सबसे विलक्षण और उत्तमता में अनुपम" हैं। (Most remarkable and solitary in excellence)।

वास्तव में बात है भी ऐसी, क्योंकि यह उपलब्धि आज से लगभग 14 शताब्दी पूर्व की है। यूरोप में तो सूत्र (5) का प्रथम उल्लेख डब्ल्यू स्नैल (W. Snell) ने ईसवी सन् 1619 के आस पास किया है, अर्थात् लगभग एक हजार वर्ष बाद। अभी हाल (सन् 1988) में कुछ ऐसे प्रमाण मिले हैं जिनसे लगता है कि स्नैल से लगभग 50 वर्ष पूर्व रेजिओमोन्टेनस (Regiomontanus) इत्यादि को सूत्र (1), (4) और (5) ज्ञात थे।

इतना सब होने पर भी ब्रह्मगुप्त की इस श्रेष्ठ ख्याति में लोग थोड़ा सा दोष देखते हैं, जैसे चन्द्रमा में छोटा सा काला धब्बा। यहां भी कुछ विद्वान वही शिकायत करते हैं कि ब्रह्मगुप्त ने यह स्पष्ट नहीं किया है कि उनके सूत्र (4) और (5) केवल चक्रीय चतुर्भुज के लिए हैं। लेकिन ब्रह्मगुप्त ने जो संक्षिप्त शैली अपनाई है, उसमें वे इन सब स्पष्टीकरणों को कैसे महत्व देते, जैसे तार से संदेश भेजने में केवल मुख्य बातें ही लिखना पर्याप्त समझा जाता है, और फिर समझदार के लिये इशारा काफी होता है। ब्रह्मगुप्त ने जो "विषम" (unequal) शब्द का यहाँ प्रयोग किया उसका अर्थ व्यापक विषम (general scalene) चतुर्भुज नहीं, बल्कि चक्रीय विषम चतुर्भुज है, जिसमें दोनों कर्ण (या लम्ब) (altitudes) असमान (unequal) या भिन्न (different) हों। वर्ग, आयत तथा द्विसम समलम्ब चतुर्भुज (isosceles trapezium) के दोनों कर्ण (या लम्ब) समान होते हैं, और उन्हें अन्य विधियों से सरलतापूर्वक प्राप्त किया जा सकता है। इसलिये टीकाकार पृथूदक (9वीं शताब्दी) के अनुसार, इन अविषम (non-scalene) चक्रीय चतुर्भुजों को ब्रह्मगुप्त ने सूत्र (4) तथा (5) देने वाले नियम से अलग रखा है, हालांकि इसकी कोई आवश्यकता नहीं थी। (विषम चतुर्भुज के बारे में नीचे भी देखें)।

दुर्भाग्य से बाद के कुछ, भारतीय गणितज्ञों को भी इस विषय में भ्रम और शिकायत बनी रही। उदाहरण के लिये भास्कर द्वितीय ने ब्रह्मगुप्त के मूल संस्कृत श्लोक को अपनी

लीलावती में उद्धृत करते समय यह टिप्पणी की है–

"चार भुजाओं से चतुर्भुज के कर्ण निर्धारित नहीं होते, फिर भी उनको निर्धारित या नियत मानकर ब्रह्मगुप्त आदि ने उनको प्राप्त किया है।"

परिगत वृत्त की त्रिज्या

चक्रीय विषम चतुर्भुज के परिगत वृत्त की त्रिज्या निकालने के लिए ब्रह्मगुप्त का नियम इस प्रकार है –

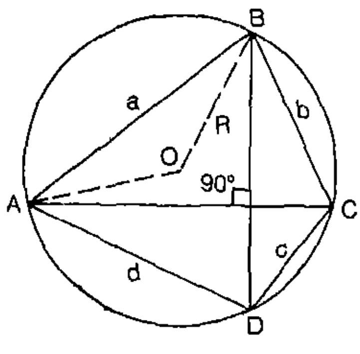
"हृदयं विषमस्य भुज प्रतिभुज कृतियोग मूलार्धम्"
(ब्राह्मस्फुट सि. XII, 26)

अर्थात्

"विषम चतुर्भुज की किसी भुजा और सामने की भुजा के वर्गों के योग का मूल लेकर आधा करने से हृदय रेखा यानी परिगत वृत्त की त्रिज्या प्राप्त होती है।"

अर्थात्

$$R = \frac{1}{2}\sqrt{a^2 + c^2} = \frac{1}{2}\sqrt{b^2 + d^2} \qquad (6)$$



चित्र 3.2

इससे लगता है कि ब्रह्मगुप्त को व्यापक चक्रीय चतुर्भुज के परिगत वृत्त की त्रिज्या निकालने का ज्ञान नहीं था। क्योंकि सूत्र (6) केवल उन्हीं विषम चक्रीय चतुर्भुजों पर लागू होता है जिनके कर्ण एक दूसरे पर लम्ब होते हैं (चित्र 3.2)। अविषम के लिए श्लोक के पूर्वार्ध में सरल नियम दे दिया गया है।

लेकिन यहाँ भी समस्या वही है, क्योंकि ब्रह्मगुप्त ने स्वयं यह सब स्थितियाँ स्पष्ट नहीं की हैं और यदि "विषम" चतुर्भुज का ब्रह्मगुप्त के लिए सदैव

वही अर्थ था जो यहाँ वर्णित नियम के लिए, तो फिर उनके द्वारा दिए गए सूत्र (5) का उन्हें कुछ कम श्रेय मिलेगा। खैर कुछ भी हो, उन चक्रीय चतुर्भुजों का महत्व भी कम नहीं है जिनके कर्ण एक दूसरे पर लम्ब होते हैं। इन्हें गणित के इतिहासज्ञ "ब्रह्मगुप्त चतुर्भुज" कहते हैं, क्योंकि इन्होंने उनके प्राप्त करने का उपाय बताया । बाद में इन पर काफी शोध कार्य हुआ। व्यापक चक्रीय चतुर्भुज के वृत्त की त्रिज्या के लिए सही सूत्र परमेश्वर ने अपनी उस टीका में दिया है जो उन्होंने ईसवी सन् 1432 में प्रसिद्ध ग्रन्थ *लीलावती* पर लिखी थी। दो श्लोकों में वर्णित उनका नियम इस प्रकार है–

दोष्णां द्वयोर्द्वयोर्घातयुतीनां तिसृणां वधे।
एकैकोनेतरत्र्यैक्यचतुष्केण विभाजिते।।
लब्धमूलेन यद्वृत्तं विष्कम्भार्धेन निर्मितम् ।
सर्वं चतुर्भुजं क्षेत्रं तस्मिन्नेवावतिष्ठते।।

अर्थात्

"चार में से दो-दो भुजाओं की घातों के तीन योगों को आपस में गुणा करो और फिर भुजाओं में से तीन को जोड़कर तथा चौथी को घटाकर बनाए गये चतुष्टय से भाग दो। लब्धि के वर्गमूल के बराबर त्रिज्या लेकर जो वृत्त खींचा जाएगा, सारा चतुर्भुज उसके अन्तर्गत रहेगा।

यहां a, b, c, d में से एक समय दो घातों के तीन योग होंगे—

(ab+cd), (ac+bd), (ad+bc);

और a, b, c, d में से तीन को जोड़कर तथा चौथे को घटाकर बने चार प्रकार होंगे।

(a+b+c–d), (b+c+d–a), (c+d+a–b), (d+a+b–c)

परमेश्वर के नियम के अनुसार–

$$R = \sqrt{\frac{(ab+cd)(ac+bd)(ad+bc)}{(a+b+c-d)(b+c+d-a)(c+d+a-b)(d+a+b-c)}} \qquad (7)$$

$$= \frac{1}{4}\sqrt{\frac{(ab+cd)(ac+bd)(ad+bc)}{(s-a)(s-b)(s-c)(s-d)}} \qquad (8)$$

जहाँ, $s = \frac{(a+b+c+d)}{2}$

यह सूत्र बहुत ही विलक्षण है और प्राचीन गणित जगत के श्रेष्ठतम सूत्रों में अनुपम। चक्रीय चतुर्भुज के इतिहास में इस सूत्र का महत्व' वही है जो ब्रह्मगुप्त द्वारा प्रतिपादित क्षेत्रफल और कर्ण संबंधी सूत्रों का। उसकी गणितीय सुन्दरता सराहनीय है और उसका वर्णन करने वाली भाषा शैली भी कम सराहनीय नहीं है।

एक विशेष ध्यान देने योग्य बात यह है कि सूत्र (7) के प्राप्त करने की भारतीय विधि भी उस समय के आसपास लिखे ग्रन्थों में उपलब्ध है, और हम उतने अंधकार में नहीं हैं जितने ब्रह्मगुप्त के सूत्रों के बारे में। वास्तव में *क्रियाक्रमकरी* नाम से प्रसिद्ध *लीलावती* की एक अन्य टीका (16वीं शताब्दी) में परमेश्वर के सूत्र को उद्धृत किया गया और फिर उसको सिद्ध भी किया गया। यह उपपत्ति जितनी सरल है उतनी ही वैज्ञानिक और विचित्र (नीचे देखें)।

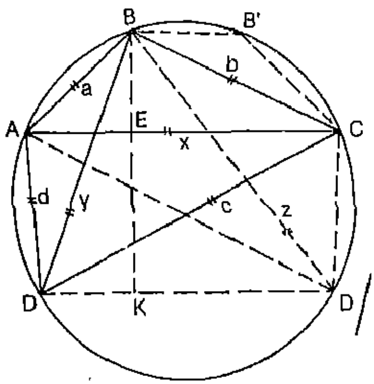
आगे बढ़ने से पहले एक तथ्य को देना जरूरी है। वह यह कि जो सूत्र (7) भारत में 15वीं शताब्दी के प्रारम्भ में ही प्राप्त कर लिया गया, उसको यूरोप में 1782 ई. में एस. ए. जे. लु-यूलियर (L'Huilier) ने फिर से खोज करके प्रकाशित किया। काश! विश्व और भारत की राजनैतिक और अन्य परिस्थितियां ऐसी होतीं कि यूरोप को कूपमंडूकता से बाहर निकालतीं। तब गणित की प्रगति की गति और अधिक रही होती।

तृतीय कर्ण की खोज़

अब हम गणित के क्षेत्र में की गई भारतीय गणितज्ञों की एक ऐसी खोज (discovery) का वर्णन करते हैं जो अनुपम तो है ही साथ में अति सौंदर्यपूर्ण भी है। वह है चक्रीय चतुर्भुज के तीसरे कर्ण (third diagonal) की, जिसका नाम सुनते ही लोग चौंक उठेंगे। क्योंकि दो कर्ण की बात तो स्पष्टतया प्रत्यक्ष होने के कारण सब जानते हैं, लेकिन यह तीसरा कर्ण चतुर्भुज में कहां होगा। लेकिन पाठकों, यह भारत है जहाँ त्रिशरा (तीन सिर वाली राक्षसी), त्रिजटा (तीन चोटी वाली एक राक्षसी), त्रिनयन (शंकर जी के) इत्यादि कोई

विचित्र संज्ञाएं नहीं हैं, तो त्रिकर्ण (तीन कान) की बात कोई अस्वाभाविक नहीं लगती। कुछ लोग चतुर्भुज के तृतीय कर्ण को एक गणितीय आविष्कार मान सकते हैं, लेकिन उसका विवेचन इतना स्वाभाविक है कि उसे मात्र एक खोज कहना ज्यादा उचित है।

चतुर्भुज के तीसरे कर्ण की खोज किसने, कब और किस स्थान पर की, इन प्रश्नों का उत्तर देना कठिन है। परन्तु उसके लिये आवश्यक पृष्ठभूमि तैयार करने वाली परम्पराएं काफी प्राचीन हैं। वैदिक काल से ही भारत में विभिन्न आकृतियों की वेदियों (altars) और अग्नियों (fire - places) के क्षेत्रफलों की समानता रखने की धार्मिक आवश्यकता थी। साथ ही एक आकृति में बदलने की जरूरत पड़ती थी। वृत्त को वर्ग में बदलना (Squaring the circle) और वर्ग को वृत्त में बदलना (Circling the square) जैसे गणित के प्रसिद्ध प्रश्न इन्हीं आवश्यकताओं से प्रेरणा पाये और लगभग 5000 वर्ष तक गणितीय जगत में छाये रहे। आकृति परिवर्तन में क्षेत्रफल के स्थान पर कभी कभी उसके घेरे का मान अपरिवर्तित रखा जाता था। इस प्रकार ज्यामितीय आकृतियों में ऐसे परिवर्तनों का अध्ययन करना एक विषय बन गया जिसमें रूपान्तर से आकृति में क्षेत्रफल और परिसीमा (perimeter) वही रहें।



चित्र 3.3

चक्रीय चतुर्भुज (जिन पर भारतीय गणित में ज्यादा ध्यान दिया गया) में किये क्षेत्रफल और परिसीमा परिरक्षित (area and perimeter preserving) रूपान्तरों (modifications) के फलस्वरूप ही तृतीय कर्ण की प्राप्ति हुई।

इसको अच्छी प्रकार से समझने के लिए चित्र 3.3 पर ध्यान दीजिए जिसमें ABCD कोई दिया हुआ चक्रीय चतुर्भुज है जहां AB=a, BC=b, CD=c तथा DA=d है । AC और BD उसके दो कर्ण हैं। अब चाप CD पर D' ऐसा बिंन्दु लें जहां जीवा CD'=AD=d और AD' = CD = c

स्पष्ट है कि त्रिभुज AD'C का क्षेत्रफल वही है जो त्रिभुज ADC का है। इस प्रकार ABCD' एक नया (रूपान्तरित) चतुर्भुज मिला जिसका क्षेत्रफल और परिसीमा दोनों ही वही हैं जो चतुर्भुज ABCD के। परन्तु साथ ही एक नया कर्ण BD' उभरकर सामने आ गया जिसे चतुर्भुज ABCD का तीसरा कर्ण कहते हैं।

इसको जानकर एक प्रश्न स्वाभाविक ही उठेगा। वह यह कि इसी तरह के अन्य रूपान्तर करके हम अन्य बहुत से कर्णों का पता लगा सकते हैं। वास्तव में प्रयत्न किये भी गये।

उदाहरण के लिए चाप BC पर एक बिंदु B' ऐसा लिया जहाँ AB'=CB=b तथा CB' = AB = a है।

इस प्रकार AB'CD' एक अन्य रूपान्तरित चतुर्भुज मिला। परन्तु नए कर्ण B'D' का मान वही है जो BD का। वास्तव में चतुर्भुज AB'CD' भी मूल चतुर्भुज का ही एक पलटा या घूमा हुआ रूप है। अन्यथा दोनों की आकृतियों में कोई अन्तर नहीं है।

अतः एक और नये (चौथे) कर्ण की आशा पर पानी फिर गया। इसी प्रकार रद्दोबदल करके आप ABCD के अन्य रूप प्राप्त कर सकते हैं। लेकिन तीन के अतिरिक्त कोई नये मान या माप का चौथा कर्ण नहीं मिलेगा। वास्तव में यह सिद्ध किया जा सकता है कि चक्रीय चतुर्भुज के तीन से ज्यादा कर्ण संभव नहीं हैं। सच पूछो तो इस निर्णय की जो उपपत्ति भारतीयों ने उस समय दी वह भी सरल के साथ सुंदर है (आगे का विवरण देखें)।

तृतीय कर्ण सम्बन्धी गणित

यह बात भास्कर द्वितीय (12वीं शताब्दी) को भी ज्ञात थी कि यदि किसी चतुर्भुज की दो पार्श्व भुजाओं की अदला-बदली की जाए, तो उसके दूसरे कर्ण का मान बदल जाता है (अर्थात् एक नया या तीसरा कर्ण मिल जाता है)। उन्होंने *लीलावती* में 25, 39, 60 और 52 भुजाओं और 56 तथा 63 कर्ण वाले चतुर्भुज में दो छोटी(या दो बड़ी) भुजाओं की अदला-बदली करके एक नया कर्ण 65 निकाला है। उनके टीकाकार गणेश दैवज्ञ ने

40, 51, 75 और 68 भुजाओं वाले चतुर्भुज को लेकर 77, 84 व 85 मान वाले (तीनों) कर्ण निकाले हैं।

नारायण पंडित ने अपनी *गणित कौमुदी* (ई. 1356) में इस विषय पर कुछ अच्छे सूत्र दिये हैं। उसके क्षेत्र व्यवहार का 52वां सूत्र इस प्रकार है –

द्विगुणव्यासविभक्ते त्रिकर्णघातेऽथवा गणितम् ।

अर्थात्

"तीन कर्णों के गुणनफल को व्यास के दुगुने द्वारा भाग देने से क्षेत्रफल आ जाता है।" यानी

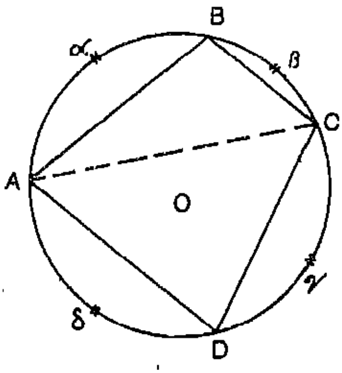
$$S = xyz/4R \qquad (9)$$

जहाँ x, y, z, चतुर्भुज के तीन कर्ण हैं और 2R उसके परिगत वृत्त का व्यास। आगे चलकर उन्होंने (9) का दूसरा रूप भी दिया है–

$$R = xyz / 4S \qquad (10)$$

यह सिद्ध किया जा सकता है कि S तथा x,y,z के मान रखने पर सूत्र (10) ठीक सूत्र (7) का रूप ले लेता है।

16वीं शताब्दी में *लीलावती* पर दक्षिण भारत में लिखी गई बृहत् टीका *क्रियाक्रमकरी* में कर्णों का विवेचन बहुत सूक्ष्म और गूढ़ है। सबसे पहले तो यह सिद्ध किया गया कि चक्रीय चतुर्भुज में तीन से ज्यादा कर्ण नहीं हो सकते, भुजाओं की चाहे कितनी ही अदला-बदली करें। प्रस्तुत तर्क इस प्रकार है–



चित्र 3.4

मान लो चार भुजाओं से वृत्त के केन्द्र पर बने कोणों का मान α, β, γ, δ है। इनको हम भुजाओं द्वारा काटे वृत्तीय चापों के भी कोणीय मान कह सकते हैं (जैसा कि प्राचीन भारत में किया जाता था)। कोई भी कर्ण प्राप्त करने के लिए दो चापों की आवश्यकता होगी, जैसे कर्ण AC चाप AB(= α) तथा चाप BC(= β) के सहयोग से बना है (चित्र 3.4 देखें)।

चूंकि उपलब्ध चाप चार हैं, अतः सम्भव कर्णों की संख्या होगी

$$^4C_2=\frac{4\times3}{1\times2}$$

लेकिन हम जानते हैं कि $\alpha+\beta+\gamma+\delta=360^0$

अतः चाप $(\alpha+\beta)$ से जो कर्ण बनेगा, वही चांप $(\gamma+\delta)$ से बनेगा जैसा कि चित्र 3.4 से स्पष्ट है, जहां चाप $(\alpha+\beta)$ से जो AC कर्ण बन रहा है, वही चाप $(\gamma+\delta)$ से भी। अतः वास्तव में 6 के स्थान पर केवल 3 ही स्वतंत्र कर्ण बनेंगे।

चित्र 3.3 में जो तीन कर्ण प्रदर्शित किए गए हैं, उनमें–

कर्ण AC (=x), चाप $(\alpha+\beta)$ से;

कर्ण BD (=y), चाप $(\beta+\gamma)$ से;

तथा कर्ण BD′ (=z), चाप $(\gamma+\alpha)$ से बना है।

इसके बाद *क्रियाक्रमकरी* में एक त्रिकोणमितीय विस्तृत उपपत्ति से निम्नलिखित सूत्र प्राप्त किये गये हैं–

$$ab + cd = yz \qquad (11)$$

$$bc + da = zx \qquad (12)$$

$$ca + bd = xy \qquad (13)$$

यूनानी ज्योतिषी टॉलमी (Ptolemy) को इनमें से केवल एक सूत्र मालूम था, क्योंकि उसे चक्रीय चतुर्भुज के दो कर्ण ही ज्ञात थे। भारतीय गणितज्ञों का यह व्यापकीकरण इतना सुंदर है कि उसकी जितनी सराहना की जाए कम है। उनकी विलक्षण सममिति (symmetry) तो देखिए–

एक गणितीय सुंदरता तो सूत्र (11), (12) तथा (13) को अमूर्त शुद्धगणित दृष्टि से देखा जा सकता है। कोई भी चार संख्याओं a, b, c, d (जहाँ किन्हीं तीन का जोड़ चौथी से ज्यादा हो) से दो-दो लेकर घातों के जोड़े (pairs) बनाये जायें तो ऊपर के संबंधों को छोड़कर अन्य कोई सम्भावना नहीं है।

(11), (12) तथा (13) में से कोई दो का आपस में गुणा करके तीसरे से भाग देकर हम x^2, y^2 तथा z^2 का मान निकाल सकते हैं। फिर वर्गमूल लेने पर तीन कर्णों के मान

अलग-अलग प्राप्त हो जायेंगे।

AC=x और BD=y के लिये ब्रह्मगुप्त के सूत्र (4) और (5) इस तरह प्राप्त हो जाते हैं। लेकिन ब्रह्मगुप्त ने स्वयं 900 वर्ष पूर्व अपने सूत्र इसी तरह प्राप्त किये होंगे, यह निश्चयपूर्वक नहीं कहा जा सकता। ब्रह्मगुप्त को त्रिभुज के लिये निम्नलिखित सूत्र भी ज्ञात था।

त्रिभुज की हृदयरज्जु (circumradius) = $\frac{\text{पार्श्व भुजाओं का गुणनफल}}{\text{लम्ब का दुगुना}}$ यदि इस सूत्र को चित्र 3.3 में त्रिभुज BDD′ पर लगाया जाए तो

$$R = yz / 2BK \tag{14}$$

लेकिन चतुर्भुज ABCD का क्षेत्रफल

$$S = \text{त्रिभुज } ACB + \text{त्रिभुज } ACD$$
$$= (AC \times BE/2) + (AC \times KE/2)$$
$$= AC \times (BE + EK)/2$$
$$= x \times BK/2$$
$$= xyz/4R, \text{ सूत्र (14) से।}$$

अर्थात्

$$R = xyz/4S \tag{15}$$

यदि ब्रह्मगुप्त के सूत्र (1) से S का मान, तथा (11), (12), (13) से x,y,z के मानों को सूत्र (15) में रख दें तो हमें चक्रीय चतुर्भुज की हृदयरज्जु R के लिये परमेश्वर का सूत्र (7) प्राप्त हो जाएगा।

अध्याय 4

मध्ययुगीय दक्षिण भारत की गणितीय उपलब्धियाँ

सुविधा के लिए ऐतिहासिक अध्ययन को अनेक कालों (Periods) में विभाजित किया जाता है। लेकिन यह विभाजन विशेष सभ्यता और विषय के इतिहास के लिए वही नहीं है जो विश्व इतिहास के लिए। स्थूल विभाजन में सामान्यतया प्राचीन, मध्य और आधुनिक ये तीन कालावधियाँ पर्याप्त होती हैं। विश्व के इतिहास का मध्य युग ई. पाँचवीं शताब्दी से प्रारम्भ होता है जब सन् 476 में रोम सम्राट का एक गोथ (Goth) द्वारा विस्थापित होने के साथ महान् रोमन साम्राज्य का पारम्परिक पतन हो गया। विश्व के गणित और विज्ञान के इतिहास के अध्ययन के लिए भी मध्य युग 5 से 15वीं शताब्दी तक माना जाता है।

लेकिन भारत की स्थिति दूसरी थी। अनेक प्राचीन देश जैसे मिस्र, मेसोपोटामिया, फारस, यूनान इत्यादि और भारत में एक विशेष अन्तर यह है कि इसका इतिहास अविच्छिन्नता से चलता रहा।

प्राचीन मिस्र, सुमेर, बेबीलोन, असीरिया, यूनान और रोम की सभ्यताओं और संस्कृतियों का अस्तित्व कभी का समाप्त हो चुका है, परन्तु भारतीय सभ्यता और संस्कृति की धारा बराबर प्रवाह होती रही है। इकबाल के शब्दों में–

यूनान मिस्र रोमां सब मिट गये जहां से
बाकी रहा है अब तक नामोनिशां हमारा।



चित्र 4.1 दक्षिण भारतीय दृश्य

निरन्तर क्रम की इस स्थिति में भारतीय इतिहास के मध्य युग का प्रारम्भ कब माना जाए, इस पर मतभेद होना स्वाभाविक है। प्रसिद्ध इतिहासकार रमेशचन्द्र मजुमदार के अनुसार-

"इस्लाम धर्म के प्रबल आक्रमण के पश्चात् जब संस्कृति का पतन हुआ तथा कला और साहित्य में सृजनात्मक भावना का ह्रास हुआ, उसी समय ईसवी 1000 के आसपास (भारत के) मध्ययुग का प्रारम्भ प्रतीत होता है।"

इस्लाम धर्म के प्रभाव से मध्य एशिया में बौद्ध धर्म प्रायः समाप्त हो गया था। युद्धों से सताये गये हजारों भिक्षु वहाँ से भाग गये थे । महमूद गजनवी (997-1030) ने भारत पर हमला किया और कन्नौज, मथुरा, बनारस आदि नगरों को लूटा। ईसवी 12वीं शताब्दी में इख्तियार उद्दीन मुहम्मद इत्यादि ने हमला करके नालन्दा, ओदन्तपुर और अन्य पूर्वी भारत के बौद्ध विहारों को नष्ट कर दिया तथा भिक्षुओं को मार डाला।

ईसवी सन् 1200 के आसपास दिल्ली सल्तनत की स्थापना हुई जब कुतुबुद्दीन पहला

मुहम्मदी शासक बना। उसका शासन पूरे उत्तरी भारत में था। इस प्रकार नये धर्म के संपर्क से उत्तरी भारत में एक नई संस्कृति की शुरूआत हुई जिसमें प्राचीन भारतीय साहित्य, कला और विज्ञान की मूल परम्पराओं की सृजनात्मक भावनाएँ दब सी गईं। अंतः अधिकतर विद्वान ई. 13 वीं शताब्दी के प्रारम्भ से भारत के मध्य युग (Medieval Age) का श्रीगणेश मानते हैं।

लेकिन सुदूर दक्षिण भारत अभी भी बाहरी आक्रमणों और राजनैतिक उथल-पुथल से इतना प्रभावित नहीं हुआ था। इसलिए प्राचीन पारम्परिक ज्योतिष और गणित का विकास वहाँ होता रहा और अनेक महत्वपूर्ण उपलब्धियाँ भी हुईं। अतः बहुत से इतिहासकारों का यह मत कि भारत में भास्कराचार्य (12वीं शताब्दी) के बाद पारम्परिक गणित के विकास का सिलसिला ठप पड़ गया, ठीक नहीं है। नीचे के पृष्ठों में हम ई. 13 से 18 वी शताब्दी के बीच में हुई दक्षिण भारत की गणितीय उपलब्धियों की चर्चा करेंगे जिससे वहाँ के विशेष योगदान का पता चल जायेगा।

मध्ययुगीय दक्षिण भारत के गणितज्ञ

दक्षिण भारत के मध्य युग की गणितीय उपलब्धियों का विषयबार वर्णन करने के पहले हम वहाँ के मुख्य गणितज्ञ और ज्योतिषियों तथा उनकी रचनाओं का एक संक्षिप्त सर्वेक्षण करेंगे। दक्षिण भारत से हमारा अभिप्राय यहाँ मोटे रूप में वह भाग है जो विन्ध्य पर्वत शृंखला के दक्षिण में स्थित है। इसमें वे विभाग या प्रदेश आते हैं जिनको आजकल आंध्र प्रदेश, कर्नाटक, तमिलनाडु और केरल कहते हैं। अतः संस्कृत के अतिरिक्त हमें मुख्य चार क्षेत्रीय भाषाओं तेलगु, कन्नड़, तमिल और मलयालम में लिखी कुछ बातों का उल्लेख करने का अवसर प्राप्त होगा।

मध्य युग में सबसे अधिक योगदान केरल क्षेत्र का रहा है जहाँ आर्यभट प्रथम के अनुयायियों का एक सम्प्रदाय जोर-शोर से कार्यरत था। *आर्यभटीय* के करीब एक दर्जन टीकाकार और अनेक ग्रन्थों की सैकड़ों पांडुलिपियाँ इस क्षेत्र की विरासत हैं। मध्य युग के पहले के केरल क्षेत्र के गणितज्ञों में वररुचि प्रथम (ई. चौथी शताब्दी) वहाँ की ज्योतिषीय परम्पराओं के आदि प्रवर्तक माने जाते हैं। उन्होंने संख्याओं को अक्षरों द्वारा निरूपण करने

की बहुत ही लोकप्रिय प्रणाली का प्रतिपादन किया जिसे "कटपयादिन्याय" कहते हैं। (आगे देखें)।

हरदत्त (ई. 7वीं शताब्दी) ने "परहित" नाम से विख्यात एक नई ज्योतिषीय गणन-पद्धति निकाली। *महाभास्करीय* के प्रसिद्ध भाष्यकार गोविंद स्वामी का स्थान 10^0 उत्तरी अक्षांश (latitude) पर स्थित था। *लघुभास्करीय* के टीकाकार शंकरनारायण (ई. 9वीं शताब्दी), जो सम्भवतः गोविंद स्वामी के शिष्य थे, कोल्लापुरी के निवासी तथा राजा रवि वर्मा के राजज्योतिषी थे। *लघुभास्करीय* के अन्य टीकाकार उदय दिवाकर थे जिनकी *सुन्दरी* (ई. 1073) टीका में संसार प्रसिद्ध चक्रवाल रीति (cyclic method for solving $Nx^2+1 = y^2$) पर जयदेव के श्लोक उद्धृत हैं।

आर्यभटीय के टीकाकार सूर्यदेव यज्वा (जन्म 1191) गंगैकोण्ड चोलापुरम के निवासी थे। उन्होंने मुंजालकृत *लघुमानस* (सन् 932) और गोविंद स्वामी कृत *महाभास्करीय भाष्य* की व्याख्याएँ लिखी हैं।

संगमग्राम में जन्मे माधव (लगभग 1340 से 1425) योगदान की दृष्टि से इस युग के सर्वश्रेष्ठ गणितज्ञ और गोलविद् थे। लेकिन उनकी लिखी कुछ गणित की पुस्तकें मूलरूप में उपलब्ध नहीं हैं। केवल परवर्ती उद्धरणों से ही हमें संतोष करना पड़ता है। उनका *वेण्वारोह* (चन्द्रवाक्यानि) छप चुका है तथा कुछ अन्य ग्रन्थ जैसे *महाज्यानयनप्रकार* उपलब्ध हैं।

समुद्रतट पर निला नदी के मुहाने के पास स्थित वटश्रेणी के निवासी परमेश्वर (लगभग 1360-1455) ने लम्बे काल तक वेध किया और परहित पद्धति को शुद्ध करके अपनी दृग्गणित पद्धति चलाई। उन्होंने करीब 30 ग्रन्थों की रचना की जिनमें *दृग्गणित* (1430 ई), *गोलदीपिका* (तीन पाठ), *ग्रहण न्याय दीपिका*, *चन्द्रच्छायागणित* इत्यादि मुख्य हैं। जिन ग्रन्थों पर उन्होंने टीकाएँ लिखी हैं उनके नाम हैं *लीलावती*, *सूर्यसिद्धांत*, *आर्यभटीय महाभास्करीय*, *लघुभास्करीय*, *लघुमानस* इत्यादि।

आचार्य नीलकंठ सोमयाजि (1444-1545) दक्षिण मलावार में स्थित कुण्डपुर के निवासी थे। उनका *आर्यभटीय भाष्य* बहुत महत्वपूर्ण है। उनके *तंत्रसंग्रह* में भारतीय गणित और गणितीय ज्योतिष की सामग्री भरी पड़ी है। भारतीय ज्योतिष के इतिहास पर उनका *ज्योतिर्मीमांसा*

काफी उपयोगी सिद्ध होगा। *गोलसार* उनकी अन्य रचना है । त्रिचूर के निकटवर्ती गाँव शिवपुरम (चोव्वरम) के निवासी चित्रभानु (लगभग 1475 से 1550) ने सन् 1530 में *कर्णामृत* की रचना की। उनके *एकविंशतिप्रश्नोत्तर* में 21 तरह की समीकरणों का विवेचन है।

तृक्कुटवेलि परिवार के शंकर वारियर (लगभग 1500 से 1560) ने अपने गुरु के *तंत्रसंग्रह* पर *युक्तिदीपिका* तथा *लघुविवृति* नाम की दो टीकाएँ लिखी हैं। बृहत् *युक्तिदीपिका* में तो मध्य युगीय भारतीय गणित की सामग्री प्रचुरता से भरी पड़ी है। *लीलावती* पर भी शंकर ने एक विस्तारपूर्वक टीका लिखना प्रारम्भ की लेकिन उसे समाप्त नही कर पाये। उनके स्वर्गवास के बाद नारायण (लगभग 1500 से 1575) ने उसे पूरी की।

ज्येष्ठदेव (लगभग 1500-1610) प्रसिद्ध मलयालम ग्रन्थ *युक्तिभाषा* के कर्ता थे। इसमें गणित नियमों और सूत्रों की उपपत्तियाँ भारतीय परम्परा के अनुसार दी हैं । उसका एक संस्कृत रूपान्तर *गणितयुक्तिभाषा* है । ज्येष्ठदेव के एक शिष्य ने *तंत्रसंग्रह* पर पद्यवद्ध टीका लिखी थी।

महिषमंगलम् परिवार के शंकर नम्पूतिरि (1494-1570) रचित अनेक ग्रथों में *गणितसार, चन्द्रगणित क्रम* और *अयनचलनादि गणित* मुख्य हैं। उनकी *लघुभास्करीय* पर लिखी मलयालम टीका का नाम *बालशंकरम्* है। अच्युतपिषारटि (लगभग 1550-1621) कृत ज्योतिष रचनाएँ हैं – *करणोत्तम, स्फुटनिर्णय* तथा *राशिगोल-स्फुटानीति*।

पुतुमन सोमयाजि द्वारा सन् 1732 में रचित *करण पद्धति* इतनी लोकप्रिय थी कि उस पर संस्कृत, तमिल और मलयालम में टीकाएँ लिखी गई। उनका *न्यायरत्न* गणित-ज्योतिष की उपपत्तियों पर आधारित था। अठारहवीं शताब्दी में संग्रहित *ज्योतिष शास्त्र संग्रह* में तम्प्राक्कल ने गणितसार संग्रह प्रकरण को भी सम्मिलित किया है।

यह बात अभी ही प्रकाश में आई है कि कृष्णदास (1756-1852) ने *आर्यभटीय* पर एक मलयालम टीका लिखी है। इसी ग्रन्थ पर घटीगोप (लगभग 1800-1860) ने दो टीकाएँ रचीं – एक संस्कृत में और दूसरी मलयालम में। हालांकि राजकुमार शंकर वर्मा (अप्पुतम्पुरन्) कृत *सद्रत्नमाला* सन् 1823 में रची गयी, उसकी विषय वस्तु पारम्परिक है।

दक्षिण भारत में लिखे गये, महावीर कृत *गणितसारसंग्रह* का उल्लेख हम अनेक बार कर चुके हैं। आंध्र प्रदेश के पावुलूरिमल्लन ने ई. सन् 1100 के आस पास उसका तेलगु

में रूपान्तरण किया जो *सारसंग्रह गणितमु* या *पावुलूरिगणितमु* नाम से लोकप्रिय है। इस क्षेत्र के मल्लिकार्जुन-सूरि (लगभग 1178/1179 ई.) और यल्लय (15वीं शताब्दी) में से प्रत्येक ने *सूर्य सिद्धांत* पर दो टीकाएँ लिखीं जिनमें से एक संस्कृत पर तथा दूसरी तेलगु में है। वल्लभार्य (16वीं सदी) ने तेलगु में *लीलावती* का अनुवाद किया और *त्रिशतिका* पर टीका लिखी।

ई. सन् 1200 के आसपास, राजादित्य ने कन्नड़ भाषा में अनेक गणित विषय के ग्रन्थ लिखे हैं जिनमें *व्यावहार गणितम्* मुख्य है।

अंकगणित पर तमिल भाषा में कवि काक्कैप्पादिनियार द्वारा रचित *काक्कैप्पादिनियम्* अब उपलब्ध नहीं है। इसी भाषा में लिखित *अस्थान कोलाहलम्* और कारिकृत *कनक्कादिकारम्* में कुछ प्राचीन सामग्री उपलब्ध है।

अब हम दक्षिण भारत की मध्ययुगीय मुख्य गणितीय उपलब्धियों को विषय बार प्रस्तुत करेंगे।

दशमिक स्थानमान संज्ञाएँ और कटपयादिन्याय

परम्परागत दशोत्तर गणना के लिए श्रीधर की 18 संज्ञाओं की सूची उत्तर भारत में लगभग मानक थी। लेकिन दक्षिण में महावीर की 24 नामों की सूची प्रचलित थीं। इसी को आधार मानकर *पावुलूरिमल्लन* ने इसमें 12 नाम और जोड़ दिए। दुर्भाग्य से *पावुलूरिगणितमु* की पांडुलिपियों में इनका पाठ एक समान नही है। एक कुलक (set) इस प्रकार है।

निधि ($=10^{24}$), महानिधि, परत, परार्ध, अनन्त, सागर, अव्यय, अचिन्त्य, अमृत, अमेय, भूरि, और महाभूरि ($= 10^{35}$)। केलादि के राजा बसव (लगभग ई. 1700) द्वारा संग्रहित *शिवतत्व रत्नाकर* में भी महावीर की सूची का 37 स्थानों तक विस्तृत रूप प्राप्त है जिसमें अन्तिम संज्ञा परार्ध ($= 10^{36}$) है। लेकिन ध्यान देने से यह बात स्पष्ट हो जाती है कि बसव सूची की संज्ञाएँ राजादित्य से प्रभावित हैं जिनका उल्लेख अब किया जाता है।

जैन लेखक राजादित्य ने अपने कन्नड़ ग्रन्थ *व्यावहारगणितम्* में जो 40 नामों की सूची दी है वह दक्षिण भारत या क्षेत्रीय भाषाओं में दी गई सूचियों में सबसे बड़ी है।

संज्ञाएँ इस प्रकार थीं।

(प्रथम 25 नाम महावीर की सूची पर आधारित हैं।)

1 एकम्	21 क्षिति
2 दाहम्	22 महाक्षिति
3 शतम्	23 क्षोभ
4 साबिर	24 महाक्षोभ
5 दासाबिर	25 नदी
6 लक्ष	26 महानदी
7 दालक्ष	27 नग
8 कोटि	28 महानग
9 दाकोटि	29 रथ
10 शतकोटि	30 महारथ
11 अर्बुद	31 हरि
12 न्यर्बुद	32 महाहरि
13 खर्व	33 फणि
14 महाखर्व	34 महाफणि
15 पद्म	35 क्रतु
16 महापद्म	36 महाक्रतु
17 क्षोणी	37 सागर
18 महाक्षोणी	38 महासागर
19 शंख	39 परिमित
20 महाशंख	40 महापरिमित (= 10^{39})

लगता है संसार की उपलब्ध दशोत्तर सूचियों में यह सबसे विशाल है (60 नामों वाली बौद्ध सूची पूर्णतया प्राप्त नहीं है)।

दक्षिण भारत की एक विशेष देन है "कटपयादिन्याय"। इसमें अक्षरों का उपयोग करके संख्याओं को निरूपित किया जाता है। यह संक्षिप्त रीति भारतीय गणित व ज्योतिष के

लेखकों में काफी लोकप्रिय थी। इसके आविष्कार का श्रेय वररुचि को है, जैसा कि हम ऊपर लिख चुके हैं।

इस प्रणाली में संस्कृत (नागरी) वर्णमाला के व्यंजनों से बने अक्षरों का निर्धारित संख्यामान होता है चाहे संयोग किसी भी स्वर से हो। तालिका इस प्रकार है:

संख्या	*अक्षर*
1.	क,ट,प,य,
2.	ख, ठ, फ, र
3.	ग, ड, ब, ल,
4.	घ, ढ, भ, व,
5.	ङ, ण, म, श
6.	च, त, ष
7.	छ, थ, स
8.	ज, द, ह
9.	झ, ध, ळ (विशेष अक्षर)
0	ञ, न, स्वतंत्र स्वर

संयुक्त अक्षर में केवल अन्तिम व्यंजन का ही मान लिया जाता है, बाकी सबको छोड़ दिया जाता है। स्वतंत्र स्वरों का मान शून्य होता है। "अंकानां वामतो गतिः" का नियम तो लगाना ही पड़ेगा।

उदाहरण

1. हरि = ह (8) और रि (2) = 28
2. श्रेष्ठ = श् , रे (2), ष्, ठ (2) = 22
3. अशुद्धि = अ (0), शु (5), द्धि (9) = 950
4. यज्ञस्थानम् = य (1), ज् , ञ (0) स् , था (7), न (0) म्= 0701

युगपत् समीकरण (Simultaneous Equations)

चित्रभानु को गणित के इतिहास की पुस्तकों में अभी स्थान नही मिला है। युगपत्

समीकरणों के हल करने के जो नियम उन्होंने अपने *एकविंशति-प्रश्नोत्तर* में दिये हैं, वे *लीलावती* की *क्रियाक्रमकरी* टीका में भी उद्धृत किये गये हैं। दो अज्ञातों (unknowns) से बनी निम्नलिखित 7 राशियों पर विचार करें–

(i) $x+y = a$, कहो
(ii) $x-y = b$
(iii) $xy = p$
(iv) $x^2+y^2 = m$
(v) $x^2-y^2 = n$
(vi) $x^3+y^3 = r$
(vii) $x^3-y^3 = s$

इनमें से, एक समय में, यदि कोई भी दो दी गई हों, तो $^7C_2$ अर्थात् 21 प्रश्न बनेंगे जिन सबका विवेचन चित्रभानु ने किया है। इनमें से 15 प्रश्नों के उत्तर पाना तो उस समय सरल था और चित्रभानु ने उनके सूक्ष्म हल की विधि दी है। उदाहरण के लिए–

$$x+y = a \text{ z} \quad (1)$$

$$x^3+y^3 = r \quad (2)$$

लीजिए । चित्रभानु इस प्रकार प्रारम्भ करते हैं–

योगघनाद् घनयोगे त्यक्ते त्रिगुणेन राशियोगेन ।
शिष्टे हृतेऽथ राश्योर्द्वयोर्भवेदिष्टयोर्घातः ।।

अर्थात् "अज्ञातों के जोड़ के घन में से उनके घनों के योग को घटाकर, शेष को जोड़ के तीन गुने से भाग करो। परिणाम इष्ट राशियों का गुणनफल होगा।"

यानी यहाँ निम्न सूत्र दिया गया है–

$$[(x+y)^3 - (x^3+y^3)] / 3(x+y) = xy \quad (3)$$

इस प्रकार,

$xy = (a^3-r) / 3a = k$ कहो ।

अब प्रश्न आसानी से हल किया जा सकता है, क्योंकि

$(x-y)^2 = (x+y)^2 - 4xy = a^2-4k$

से $(x-y)$ प्राप्त हो जाएगा और अन्त में

$x+y = a$

$x-y = \sqrt{a^2-4k}$

पर "संक्रमण" (अर्थात् जोड़ो, घटाओ और आधा करो) से x और y के मान ज्ञात हो जाएंगे।

उदाहरण के लिए-

उन राशियों को बताओ जिनका योग 25 और घन योग 4375 है।

यहाँ $x+y = 25$

$x^3+y^3 = 4775 = r$

$\therefore xy = (a^3-r) / 3a = 11250 / 75 = 150 = k$

फिर $x-y = \sqrt{a^2-4k} = \sqrt{25} = \pm 5$

धन 5 लेने पर,

$x = 15; y = 10$

तथा $x-y = -5$ लें तो

$x=10, y=15$ होगा।

इस प्रकार 21 में से 15 प्रश्न हल करने की सही विधियाँ चित्रभानु ने दी हैं।

बाकी 6 स्थितियों में सूक्ष्म हल व्यापक त्रिघातीय समीकरण (cubics) पर निर्भर करता है। अतः इन कठिन प्रश्नों में चित्रभानु ने विशेष स्थितियाँ लेकर हल दिये हैं। फिर भी भारत के मध्ययुग में उनका यह प्रयत्न सराहनीय है ।

पाई (π) के मान

आर्यभट प्रथम के अनुसार 20000 व्यास वाले वृत्त की परिधि का आसन्न माप 62832 होता है। अर्थात्

$$\pi = C/D = \frac{62832}{20000} \quad (4)$$

आंध्र प्रदेशीय टीकाकार यल्लय ने आर्यभट के नियम को लोकप्रिय कटपयादि प्रणाली

का उपयोग करके इन सुन्दर शब्दों में व्यक्त कर दिया–

"रङ्गेहरिस्तु परिधिर्विष्कम्भोज्ञानिनोनरः।"

अर्थात्

परिधि = र ङ्गे ह रि स्तु = 62832

(2, 3, 8, 2, 6)

जब विष्कम्भ (व्यास) = ज्ञा नि नो न रः = 20000

(0, 0, 0, 0, 2)

इससे कुछ और अच्छा और सरल नियम नीलकण्ठ ने *गोलसार* (III, 12) में भूत संख्याओं का उपयोग करके दिया है–

"विश्वैक समो व्यासः परिधेः प्रायोऽर्थ बाण गुण भागः।"

अर्थात् "जब व्यास विश्वैक (= 113), तब परिधि प्राय' अर्थ- बाण- गुण (= 355) होती है।"

यहाँ, π = C/D = 355/113

ईसवी सन् 1400 के आसपास माधव ने एक बहुत ही सूक्ष्ममान के लिए भूत संख्याओं से भरा यह पद्य गाया –

बिबुधनेत्रगजाहिहुताशन
त्रिगुणवेदभवारण बाहवः।
नवनिखर्वमिते वृति विस्तरे
परिधिमानमिदं जगदुर्बुधाः।

अर्थात् "नौ निखर्व (= 9×10^{11}) व्यास के वृत्त में परिधि का मान सुविज्ञ लोग 28 27, 43, 33, 88, 233 लेते हैं।"

$\therefore \pi$ = 28, 27, 43, 33, 88 233 /9×10^{11}

= 3.14159265359 (लगभग)

आधुनिक गणना से π का 11 दशमलव स्थानों तक सही मान यही है। संख्या π की अपरिमेयता का स्पष्ट उल्लेख नीलकंठ ने अपने *आर्यभटीय भाष्य* में किया है। जिसका मतलब यह है कि π के वास्तविक मान (true value) को सरल भिन्न द्वारा निरूपित करना

असम्भव है (अब हमें यह भी ज्ञात है कि π अबीजीय (non algebraic या transcendental) है। नोट- π की श्रेणी का वर्णन आगे किया गया है।

ज्यासारणियाँ

आर्यभट प्रथम की ज्यासारणी में ज्या nh, अर्थात् R sin nh के मान मिलते हैं, जहाँ $h = 3^0 45' (= 225')$, n=1 से 24, तथा $R = 21600/2\pi = 3438$ कला, लगभग।

परमेश्वर ने *लघुभास्करीय* की टीका (ई. 1408) में जो सारणी दी है, उसमें R का मान 3437' 44" अर्थात् 3437 कला तथा 44 विकला लिया गया है।

माधव ने π का सूक्ष्म मान लेकर

$R = 3437' 44'' 48'''$

प्राप्त किया (निकटतम तत्परा तक)। इस मान को उन्होंने कटपयादि प्रणाली में इस प्रकार लिखा-

"देवोविश्वस्थली भृगुः"

अर्थात्

दे, वो, वि, श्वं, स्थ, ली, भृ, गुः

(8, 4, 4, 4, 7, 3, 4, 3)

= 3437; 44, 48

इसी प्रकार माधव ने अपनी पूरी सारणी को कटपयादि प्रणाली में व्यक्त किया है। इसे नीलकंठ ने अपने तंत्रसंग्रह तथा आर्यभटीय भाष्य दोनों में ही उद्धृत किया है। सुविधा के लिये माधव की इस महाज्या सारणी को हम आधुनिक रूप में प्रस्तुत करते हैं।

सारणी

क्रम संख्या (n)	*माधव की महाज्या*	*मान*
1.	श्रेष्ठं नाम वरिष्ठानाम्	0224;50,22
2.	हिमाद्रिर्वेदभावनः	0448;42,58
3.	तपनो भानु सूक्तज्ञः	0670;40,16

4.	मध्यमं विद्धि दोहनम्	0889;45,15
5.	धिगाज्यो नाशनं कष्टम्	1105;01,39
6.	छन्न भोगा शयाम्बिका	1315;34,07
7.	मृगाहारो नरेशोऽयम्	1520;28,35
8.	वीरो रण जयोत्सुकः	1718;52,24
9.	मूलं विशुद्धं नाळस्य	1909;54,35
10.	गानेषु विरळा नराः	2092,46,03
11.	अशुद्धि गुप्ता चोरश्रीः	2266;39,50
12.	शङ्कु कर्णो नगेश्वरः	2430;51,15
13.	तनुजो गर्भजो मित्रम्	2584;38,06
14.	श्रीमानत्र सुखी सखे	2727;20,52
15.	शशीरात्रौ हिमाहारः	2858;22,55
16.	वेगज्ञःपथि सिन्धुरः	2977;10,34
17.	छायालयो गजोनीलः	3083;13,17
18.	निर्मलोनास्ति सत्कुले	3176;03,50
19.	रात्रौ दर्पणमभ्राङ्म्	3255;18,22
20.	नागस्तुङ्ग नखो बली	3320;36,30
21.	धीरो युवा कथालोलः	3371;41,29
22.	पूज्योनारीजनैर्भगः	3408;20,11
23.	कन्यागारे नागवल्ली	3430;23,11
24.	देवो विश्वस्थली भृगुः	3437;44,48

नोटः सारणी में 0224;50,22 का मतलब 224 कला, 50 विकला, और 22 तत्परा है। अन्य मान भी इसी प्रकार समझे जायें।

जीवेपरस्परन्याय

यदि A और B की ज्या मालूम हो तो (A+B) और (A–B) की ज्या कैसे निकाली जाए, इसके लिए सूत्र है-

$\sin (A \pm B) = \sin A . \cos B \pm \cos A . \sin B$

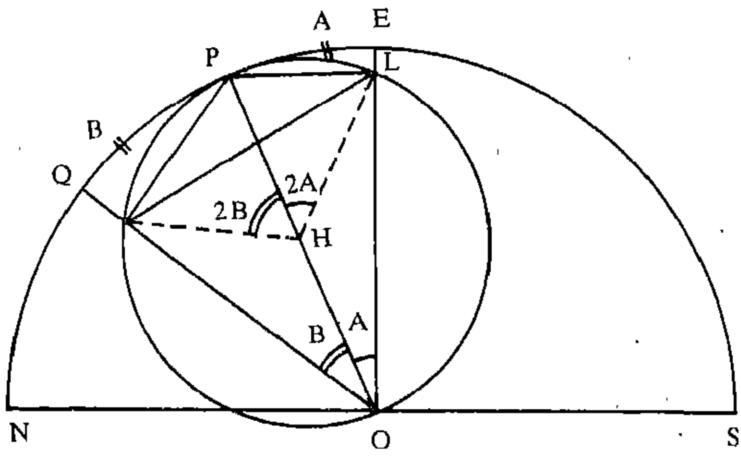
इसका प्राचीन रूप इस प्रकार होगा–

$$R\sin (A-B) = \frac{(R\sin A)(R\cos B)}{R} \pm \frac{(R\cos A)(R\sin B)}{R} \qquad (5)$$

जहाँ R sin A भारतीय ज्या A है।

हालांकि सूत्र (5) भास्कर द्वितीय के *"सिद्धान्त शिरोमणि"* अन्तर्गत ज्या प्रकरण में प्राप्त थे, फिर भी मध्ययुगीय आर्यभट सम्प्रदाय ने इनका श्रेय माधव को दिया। हाँ, एक बात अवश्य है, भास्कर ने इनकी कोई उपपत्ति नहीं दी है, जबकि माधव के अनुयायियों को यह ज्ञात थी।

मलयालम *युक्तिभाषा* (16वीं सदी) में एक उपपत्ति इस प्रकार है।



चित्र 4.2

चित्र में चाप PE = A = कोण EOP

तथा चाप PQ = B = कोण POQ

लम्ब खींचकर PL = ज्या A = R sin A

और OL = कोज्या A = R cos A

जहाँ 2R बड़े अर्धवृत्त का व्यास है। इसी प्रकार

PU = ज्या B = R sin B

तथा OU = कोज्या B = R cos B

जहाँ OP(=R) छोटे वृत का व्यास है।

अब चक्रीय चतुर्भुज PLOU में, "भुजा-प्रतिभुजान्याय" यानी टॉलमी-प्रमेय (Ptolemy's Theorem) से

PL.OU + OL. PU = LU.OP

यानी

(R sin A) . (R cos B) + (R cos A) . (R sin B) = R.LU (6)

लेकिन LU छोटे वृत में (LP+PU) चाप की पूर्ण जीवा (full chord) है।

अतः LU = 2 (R/2) . sin [(2A+2B)/2]

= Rsin (A+B)

क्योंकि चाप PL = कोण PHL = 2A

तथा चाप PU = कोण PHU = 2B

अब यदि LU का मान, समीकरण (6) में रखकर R से भाग कर दें, तो (5) का एक सूत्र मिल जाएगा।

पाई (π) के लिये श्रेणियाँ (series)

(π) पाई के सूक्ष्मतर मान निकालने के लिये सामान्यतया उसके श्रेणी-निरूपणों का उपयोग किया जाता है। तेज अभिसारी (convergent) श्रेणियाँ इसके लिये उपयोगी होती हैं। मध्ययुगीय दक्षिण भारत में पाई (π) की अनेक श्रेणियाँ ज्ञात थीं, चाहे उनका उपयोग

व्यावहारिक हो, शैक्षणिक, या मात्र शास्त्रीय।

एक पद्य, जो *गणित युक्ति भाषा, युक्ति दीपिका* और *करण पद्धति*, तीनों में प्राप्त है, इस प्रकार है–

व्यासाद्वारिधिनिहतात् पृथगाप्तं त्र्याद्ययुग्विमूलघनैः।

त्रिघ्नव्यासे स्वमृणं क्रमशः कृत्वापि परिधिरानेयः।।

अर्थात् "चारगुणित व्यास को 3, 5 आदि विषम संख्याओं के घनों में से उन्हीं संख्याओं को घटाने पर आए शेषों से पृथक-पृथक भाग दो। प्राप्त भागफलों को तीन गुने व्यास में क्रमशः जोड़ो और घटाओ। इस प्रकार (की श्रेणी) से परिधि प्राप्त होती है।"

$$C = 3D + \frac{4D}{3^3-3} - \frac{4D}{5^3-5} + \frac{4D}{7^3-7} \cdots\cdots\cdots$$

अर्थात्

$$\pi = 3 + \frac{4}{3^3-3} - \frac{4}{5^3-5} + \frac{4}{7^3-7} \cdots\cdots\cdots$$

दो अन्य संस्कृत श्लोकों, जो *गणित युक्ति भाषा, युक्ति दीपिका*, और मलयालम *युक्ति भाषा* में उद्धृत हैं, का अर्थ इस प्रकार है–

"विषम संख्याओं की 5 वीं घातों में क्रमशः उन्हीं संख्याओं के चार गुणों को जोड़ दो। प्राप्त अनेक योगफलों से 16 गुने व्यास को भाग दो, और भागफलों में से विषम पदवी (rank) वालों को जोड़ो और सम पदवी वालों को घटाओ। इस प्रकार परिधि प्राप्त होगी।

अर्थात्

$$\pi D = \frac{16D}{1^5 + 4\times1} - \frac{16D}{3^5 + 4\times3} + \frac{16D}{5^5 + 4\times5}$$

या

$$\pi = \frac{16}{1^5 + 4.1} - \frac{16}{3^5 + 4.3} + \frac{16}{5^5 + 4.5}$$

सांत अर्थात् परिमित पदों की श्रेणी के एक नमूने को इस प्रकार प्रस्तुत कर सकते हैं–

$$\pi.D = 4D - \frac{4D}{3} + \frac{4D}{5} - \ldots\ldots \pm 4Df(n)$$

जहाँ $f(n) = \frac{(n+1)/2}{(n+1)^2+1}$

क्रियाक्रमकरी में इस श्रेणी को प्राप्त करने का श्रेय माधव को दिया गया है।

ज्या, कोज्या तथा माधव-ग्रिगरी श्रेणी

उच्च गणित में ज्या (sine) और कोज्या (cosine) की ये अनन्त श्रेणियां विद्यार्थियों को पढ़ाई जाती हैं–

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \ldots\ldots \quad (7)$$

$$\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \ldots\ldots \quad (8)$$

यहाँ x का माप रेडियन में है। इनका प्राचीन रूप था

$$\sin s = s - \frac{s^3}{r^2 3!} + \frac{s^5}{r^4 5} \ldots\ldots \quad (9)$$

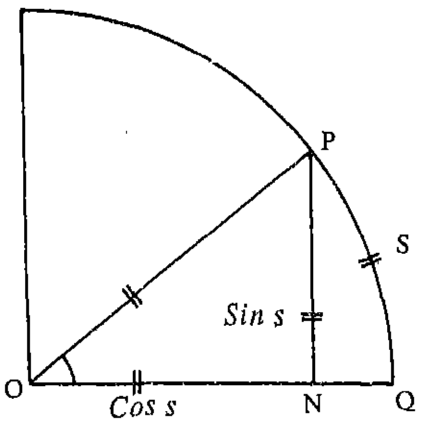
$$\cos s = r - \frac{s^2}{r2!} + \frac{s^4}{r^3 4!} \ldots\ldots \quad (10)$$

जहाँ r निर्देशवृत्त की त्रिज्या है और ज्या s (= sin s)
तथा कोज्या s (= cos s) के मान क्रमशः r sin s
तथा r cos s हैं। यहाँ चाप s का माप उसी इकाई में है जिसमें r का। सामान्यतया

यह इकाई थी कला (minute)।

शंकर वारियर (16वीं शताब्दी) ने अपनी *तन्त्रसंग्रहव्याख्या* (युक्ति दीपिका) में सूत्र (9) के लिए निम्नलिखित श्लोक दिए हैं :

निहत्य चापवर्गेण चापं तत्तत्फलानि च
हरेत् समूलयुग्वर्गैस्त्रिज्या वर्ग हतैः क्रमात् ॥
चापं फलानि चाधोऽधोन्यस्योपर्युपरित्यजेत् ।
जीवाप्तयै संग्रहोऽस्यैवं "विद्वान" इत्यादिन कृतः।



चित्र 4.3

अर्थात्

"चाप को अपने ही वर्ग से बार-बार गुणा करो, और प्रत्येक बार सम संख्याओं को अपने ही वर्ग में जोड़कर तथा त्रिज्या वर्ग से गुणा करके बनी राशियों से क्रमशः भाग दो। अब चाप को और विभिन्न भागफलों को एक खाने (column) में कितने ही पदों तक, लिखो, और अन्तिम पद को उसके ऊपर के पद से घटाओ इत्यादि। इस प्रकार अन्त में ज्या प्राप्त होती है। इसी रीति का वर्णन संक्षेप में "विद्वान" इत्यादि नियम में है।"

इसका स्पष्टीकरण इस प्रकार है। पहले हमें चाप s को बार बार s^2 से गुणा करके $(2^2+2)r^2$, $(4^2+4)r^2$, $(6^2+6)r^2$ इत्यादि से भाग देना है। इससे निम्नलिखित पद (terms) प्राप्त होंगे--

$t_1 = s.s^2 / (2^2+2)r^2$

$t_2 = s.s^4 / (2^2+2)\ (4^2+4)r^4$

$t_3 = s.s^6 /(2^2+2)\ (4^2+4)\ (6^2+6)r^6$

इत्यादि ।

मान लो हम t_n तक पद लेते हैं। यदि चाप s तथा इन सब पदों को एक खाने में लिखकर नीचे से घटाने का काम करें तो हमें

$s - [t_1 - [t_2 - [t_3 - - -(t_{n-1} - t_n) -----]]]$

अर्थात् $s - t_1 + t_2 - t_3 + \cdots\cdots$ (11)

प्राप्त होगा, जो कि sin s का निर्धारित पदों तक का मान होगा।

यदि (11) में $t_1, t_2,$----- का मान रखें, तो सूत्र (9) मिल जाता है।

अन्तिम पंक्ति में माधव के उन श्लोकों का संदर्भ है जिनका प्रारम्भ "विद्वान" शब्द से होता है और यह भी स्पष्ट हो गया है कि जो नियम माधव ने संक्षेप में कहा था उसी को यहाँ दोहराया गया है।

ठीक इसी प्रकार के नियम सूत्र (10) के लिए हैं। अतः इससे सिद्ध हो जाता है कि ज्या और कोज्या की श्रेणियां भारत में ईसवी 1400 के आसपास माधव को ज्ञात थीं जो कि एक बहुत ही महत्वपूर्ण उपलब्धि है। यूरोप के गणितज्ञों (न्यूटन आदि) को इनका ज्ञान 17 वीं शताब्दी में हुआ था।

इसी प्रकार संस्कृत स्रोतों से इस बात का भी पता लगता है कि माधव को निम्नलिखित श्रेणी भी मालूम थी।

$$R\theta \frac{R}{1}\frac{(R\sin\theta)}{R\cos\theta} - \frac{R}{3}\frac{(R\sin\theta)}{(R\cos\theta)^3} + \frac{R}{5}\frac{(R\sin\theta)}{(R\cos\theta)^5}$$

अर्थात् $\tan^{-1}x = x - \frac{x^3}{3} + \frac{x^5}{5} \cdots\cdots$

जो कि यूरोप में जेम्स ग्रिगॉरी (Gregory) को सन् 1670 के लगभग हाथ लग पाई थी (यहाँ $x = \tan\theta$)।

भारत में इन तीनों श्रेणियों की सुन्दर उपपत्तियाँ भी ज्ञात थीं, जिनसे स्पष्ट है कि आधुनिक वैश्लेषिकी (analysis) की नींव भी भारत में ही रखी गई। गणित के इतिहासज्ञ जानते हैं कि इस श्रेय में कोई अतिशयोक्ति नहीं है।

इन पृष्ठों में दक्षिण भारत की केवल चुनी हुई उपलब्धियों का संक्षिप्त विवरण दिया गया है। वैसे और भी उल्लेखनीय उपलब्धियाँ थीं। जैसे ज्यामितीय बीजगणित (geometrical

algebra) के क्षेत्र में, शुल्बसूत्रो की परम्परा को आगे बढ़ाते हुए, आर्यभट सम्प्रदाय के गणितज्ञों ने उसका विकास किया। उदाहरण के लिए, गुणोत्तर श्रेणी (G.P.) के जोड़ के सूत्र,

$$S_n = a\,(r^n - 1) / (r - 1)$$

को एक बहुत ही सुन्दर ज्यामितीय विधि से सिद्ध किया गया। इसका उल्लेख हम विशेष रूप से कर रहे हैं, क्योंकि कुछ विद्वान इसकी ज्यामितीय उपपत्ति की बात कठिन समझते हैं।

दक्षिण भारत की कुछ अन्य उपलब्धियों को हम अन्य अध्यायों में बता चुके हैं, जैसे चक्रीय चतुर्भुज की हृदय रज्जु (circum-radius) के लिये पिछला अध्याय देखें। कुछ उपलब्धियों का क्षेत्र उच्च गणित होने से उनकी चर्चा यहाँ नहीं की जा सकती है। (जैसे Taylor Series, Higher Interpolations)

इस अध्याय में वर्णित सामग्री से स्पष्ट है कि प्राचीन गणितीय परम्परा का दीपक दक्षिण भारत में सदियों तक जगमगाता रहा, जबकि उत्तर भारत में नई राजनैतिक स्थिति के कारण विद्वान आयातित अरबी ग्रंथों के विदेशी ज्ञान में रुचि लेने लगे थे। बाद में अंग्रेजी शासन के समय, जब पश्चिमी शिक्षा की हवा चली तो परम्परागत स्वदेशी अध्ययन का दीपक बुझ सा गया, और वह ज्ञान इतिहास का विषय बन गया।

उन्नीसवीं सदी के अन्त में, आधुनिक गणित के जगत में भारत का सूर्य रामानुजन के रूप में फिर उदय हुआ। उनके बारे में जानकारी अगले अध्याय में दी जा रही है, लेकिन उन पर प्राचीन भारतीय गणित की परम्परा का कितना प्रभाव था, यह कहना कठिन है।

अध्याय 5

गणित सम्राट रामानुजन

बीसवीं शताब्दी के दूसरे दशक की बात है। श्रीनिवास रामानुजन सख्त बीमारी की हालत में इंग्लैंड के एक नर्सिंग होम में भर्ती थे। उनसे मिलने के लिये प्रो. जी. एच. हार्डी टैक्सी से नर्सिंग होम पहुंचे। चूंकि रामानुजन का हाल चाल जानने के बाद प्रो. हार्डी को उसी टैक्सी से वापिस जाना था, इसलिये उसका नंबर याद रख कर अंदर चले गये।

रामानुजन के कक्ष में पहुंचकर प्रो. हार्डी ने उनसे तबियत के बारे में पूछताछ की। रोगी ने धन्यवाद देते हुए बतलाया कि उसकी हालत पहले से अच्छी है।

लेकिन आगन्तुक को इस उत्तर में सच्चाई से ज्यादा औपचारिकता महसूस हुई। क्योंकि रामानुजन क्षय रोग से ग्रसित थे और वह अंदर से क्षीण होते जा रहे थे। रोगी के चेहरे की उदासी से भी यह बात जाहिर होती थी।

प्रो. हार्डी चिंता में थे, क्योंकि रामानुजन की विलक्षण प्रतिभा और स्वस्थ शरीर के बीच एक शोकपूर्ण संघर्ष उनके सामने था। इसी बीच, टैक्सी का नम्बर याद करते हुए प्रो. हार्डी बोले–

"मैं जिस टैक्सी से आया हूँ उसका नम्बर 1729 है। यह संख्या इतनी नीरस है कि



चित्र 5.1 श्रीनिवास रामानुजन (1887-1920)

इसे याद रखने में मुझे कोई दिलचस्पी नहीं है। फिजूल में दिमाग पर जोर देना पड़ रहा है। आशा है कि वह कुछ अपशकुन सूचक नहीं होगी।"

"नहीं, ऐसा कदापि नहीं है," रामानुजन ने फौरन उत्तर दिया और आगे कहने लगे–

"यह बड़ी रोचक संख्या है। यह उन पूर्ण संख्याओं में सबसे छोटी है जिनको दो अलग-अलग प्रकार से दो घनों के योग के रूप में प्रकट कर सकते हैं।" *

अर्थात्

$1729 = 12^3 + 1^3$

और $1729 = 10^3 + 9^3$,

रामानुजन द्वारा कहे 1729 के इन निरूपणों को सुनकर प्रो. हार्डी चकित हो गये। उनको आश्चर्य हो रहा था कि रोग ग्रसित अवस्था में पड़े होने पर भी रामानुजन मानसिक रूप से इतने जागृत और सक्रिय हैं।

प्रो. हार्डी स्वयं एक महान् गणितज्ञ थे। संख्या 1729 के रोचक गुण को जानकर वे आनन्दित हुए। रोग की बातें भूलकर अब वहाँ गणितीय वार्तालाप होने लगी। प्रो. हार्डी ने रामानुजन से पूछा–

"क्या आप इसी गुण वाली चौथी घात की संख्या बता सकते हैं।"–

थोड़ा सा सोचकर रामानुजन ने उत्तर दिया।

"ऐसा कोई सरल उदाहरण अभी मेरे समक्ष नहीं है। लेकिन इस तरह की पहली संख्या अवश्य बहुत बड़ी होगी"।

जी हाँ वह इच्छित बड़ी संख्या करोड़ों तक जाती है। नौ अंकों वाली वह संख्या है

63, 53, 18, 657, क्योंकि

$63, 53, 18, 657 = 133^4 + 134^4$

तथा $63, 53, 18, 657 = 158^4 + 59^4$

जो व्यक्ति सख्त बीमारी की दशा में भी इस तरह के कठिन गणितीय उद्गार कर सकता था, उसकी गणित के प्रति रुचि और साधना अवश्य गहरी रही होगी। रामानुजन

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*अगली ऐसी संख्या $4104=16^3+2^3$ और $4104=15^3+9^3$

का गणित के प्रति प्रेम इतना अधिक था कि वे उसमें सदैव लीन रहते थे, जैसे एक सच्चा भक्त भगवान के ध्यान में।

यही कारण है कि उनमें संख्याओं के विशेष गुणों को याद रखने की अपार क्षमता थी। किसी ने सच ही कहा है कि

"प्रत्येक धनात्मक पूर्णांक रामानुजन का व्यक्तिगत मित्र था।"

रामानुजन की प्रखर बुद्धि, अलौकिक प्रतिभा और सतत साधना ने विपरीत परिस्थितियों में भी, उनको गणित के उच्च्च शिखर पर पहुंचा दिया था। फलस्वरूप उनकी गणना संसार के कुछ गिने चुने गणित सम्राटों में की जाती है।

इस अध्याय में हम तुम्हें उस गणित सम्राट के जीवन, कार्य और उपलब्धियों के बारे में संक्षिप्त जानकारी देंगे, जिसने आधुनिक गणित के क्षेत्र में भारत का मस्तक ऊँचा किया।

संघर्षमय जीवन

विवाह के अनेक वर्षों बाद भी जब कोमलम्माल के कोई संतान न हुई तो, ज्योतिषियों की सलाह पर, उसने नामगिरि देवी की विशेष उपासना की। देवी की कृपा से वह गर्भवती हुई और उसने एक बालक को जन्म दिया। माँ उसे प्यार से चिन्नस्वामी पुकारती थी लेकिन उसका नाम था श्रीनिवास रामानुजन।

रामानुजन का जन्म गुरुवार 22 दिसम्बर 1887 ई. को तमिलनाडु के ईरोड नगर में हुआ था जहाँ उनके नाना एक मुंसिफ की अदालत में काम करते थे। लेकिन उनके पिता जो एक वैष्णव ब्राह्मण थे, प्रसिद्ध तीर्थस्थान कुम्भकोणम में एक बजाज के यहाँ बही-खाते का काम करते थे। इस प्रकार गर्भ से ही रामानुजन धार्मिक परिवेश में पले जो उन्हें मां-बाप, तथा निवास स्थान के सारे वातावरण में उपलब्ध था। बचपन में रामानुजन को अपनी माँ से बहुत से भजन और कथाएँ सुनने को मिलीं।

इसी प्रभाव से बाद में भी, धार्मिक साहित्य के प्रति उनकी रुचि बनी रही, और उन्होंने उपनिषद् , तिरुकुरल इत्यादि पढ़े।

पाँच वर्ष की आयु में रामानुजन कुम्भकोणम की एक पाठशाला में भर्ती हुए जहाँ तमिल भाषा के साथ उन्होंने अंकगणित भी सीखा। बचपन से ही वे बहुत शांत और गम्भीर प्रकृति के थे। जब सहपाठी उनसे हँसी-मजाक और परेशान करने वाली अन्य हरकतें करते थे, तब भी वह कुछ नहीं बोलते थे। उनकी इस सहनशीलता और शांतिप्रियता का लोगों ने नाजायज फायदा तो उठाया, लेकिन उनके मन में रामानुजन के प्रति आदर और स्नेह भी जगा। देखने में तो उनका डीलडौल ठीक था, लेकिन वह अक्सर बीमार पड़ जाते थे। उनके चेहरे पर चेचक के कुछ निशान थे।

नवम्बर सन् 1897 में प्रथम श्रेणी में प्राथमिक परीक्षा उत्तीर्ण करने के बाद, रामानुजन ने कुम्भकोणम के टाउन हाई स्कूल में प्रवेश किया जहाँ वह 1898 से 1904 तक शिक्षा पाते रहे। उनकी प्रतिभा ने सहपाठियों के अतिरिक्त शिक्षकों को भी प्रभावित किया था। पाठन की समयसारणी बनाने का टेढ़ा काम रामानुजन को ही दिया जाता था, क्योंकि प्रभारी अध्यापक उसकी क्षमता जानते थे। लेकिन ऐसे अद्वितीय प्रतिभाशाली छात्र के पास भी विद्यालयीय आवश्यकताओं को पूरा करने के लिए पैसे नहीं थे। एक बार ट्राम से यात्रा करते समय उसकी टोपी हवा में उड़ गई जिसे खरीदने के लिये उसके पास आठ आने भी न थे। अतः नंगे सिर होने के कारण उसे संस्कृत शिक्षक की नाराजगी का सामना करना पड़ा था।

टाउन हाई स्कूल में पढ़ते समय रामानुजन ने अपनी विलक्षण बुद्धि का परिचय दिया। वह सबसे ज्यादा ध्यान गणित पर देते थे जिससे उन्हें विशेष प्रेम था। इस विषय पर कभी-कभी वह कक्षा में ऐसे प्रश्न पूछते थे जो अध्यापक को भी चकरा देते थे। सच पूछो तो उस किशोर उम्र में भी वह गणित के उच्च, जी हाँ पाठ्यपुस्तकों से बहुत आगे के, ग्रन्थ समझ लेते थे।

एस.एल. लोनी (Loney) की *समतल त्रिकोणमिति* के दूसरे भाग (जो वैश्लेषिक है और स्नातकी में पढ़ाई जाती थी) की दक्षता प्राप्त कर ली थी। दिसम्बर सन् 1903 में मद्रास विश्वविद्यालय की मैट्रिक की परीक्षा में उच्च स्थान प्राप्त करने से उन्हें आगे पढ़ने के लिये छात्रवृत्ति मिली। आजकल टाउन हाई स्कूल में एक बड़े कक्ष का नाम उसने अपने उस प्रतिभाशाली छात्र की याद में (रामानुजन हाल) रखा है।

सन् 1904 में एफ. ए. (First Arts) की पढ़ाई के लिए रामानुजन ने अपना नाम गवर्नमेंट कालेज (कुम्भकोणम) में लिखा लिया। प्रथा के अनुसार, अंग्रेजी और गणित के अतिरिक्त उन्हें कुछ अन्य विषय भी पढ़ना आवश्यक था। लेकिन अधिकतर समय तो वह अपने प्रिय विषय गणित को ही देते थे जिसके पढ़ने में उन्हें आनन्द आता था। इस विषय की जो कुछ उच्च पुस्तकें उन्हें मिलीं, उनका गहन अध्ययन किया और नये नये गणितीय प्रमेय तथा परिणाम निकाले। कैम्ब्रिज विश्वविद्यालय के प्राध्यापक जी. एस. कार लिखित पुस्तक *A Synopsis of Elementary Results in Pure and Applied Mathematics (1880/1886)* का रामानुजन पर विशेष प्रभाव पड़ा। इस ग्रन्थ की शैली अपनाकर रामानुजन ने स्वयं भी अनेक गणितीय उपलब्धियों पर पन्ने के पन्ने भर डाले। बाद में जब यही पन्ने उनकी "नोटबुक्स" के नाम से छपे (बम्बई, 1957) तो दुनिया के अनेक गणितज्ञों के लिये वर्षों तक शोध की सामग्री का विषय बने।

गणित की गवेषणा का आनन्द तो रामानुजन ने पाया, पर अन्य विषयों के प्रति अरुचि के परिणाम भी भुगतने पड़े। हुआ यह कि वे 11वीं कक्षा की वार्षिक परीक्षा में सफल न हो सके। उस समय की दृढ़ शिक्षा प्रणाली ने जो सब विषयों पर बराबर ध्यान चाहती थी, रामानुजन को क्षमा न कर सकी। छात्रवृत्ति से तो हाथ धोना ही पड़ा, साथ में गणित की साधना का जो सिलसिला चैन से चल रहा था वह भी मानसिक अशांति के कारण हाथ में न रहा।

एक निर्धन छात्र की छात्रवृत्ति के छूट जाने से उसे कागज भी क्रय करने के लिये कठिनाई हो रही थी।

नतीजा यह हुआ कि रामानुजन बहुत निराश हुए। यहाँ वहाँ प्रयत्न करने से केवल कटु अनुभव ही हाथ लगे। परेशानी में भटकने के कारण कक्षा में उनकी हाजिरी भी पूरी नहीं हो सकी। अतः गवर्नमेंट कालेज छोड़ना पड़ा। किसी तरह मद्रास के पचैयप्पा कालेज के प्रिंसिपल जे. ए. येट्स (Yates) ने मदद की तो बीमारी ने दबोच दिया। उसको भी छोड़ना पड़ा। निजी (Private) परीक्षार्थी के रूप में इम्तहान दिया (1907) तो फिर फेल हो गए और इस प्रकार प्रायः छात्र जीवन समाप्त हो गया।

लेकिन लगता ऐसा है कि इन सब परिस्थितियों के बावजूद उनकी गणित के प्रति लगन में कोई अन्तर नहीं आया। और वह नित्य नवीन खोजें करते रहे। उनके माँ-बाप को आजीविका साधन के बिना रामानुजन का दिन रात गणित से चिपके रहना पसंद न था। परिवार की आय तो मुश्किल से बीस रुपये प्रतिमाह थी। अतः रामानुजन का ध्यान "गणित की बेकार साधना" से हटाकर व्यावहारिक जीवन की ओर मोड़ने के लिये वही उपाय किया जो प्रायः इस तरह की "बीमारी" में किया जाता है, और वह है "बीवी के बन्धन में बांधना"। और इस प्रकार 1909 में रामानुजन का विवाह जानकी देवी नाम की कन्या* से संपन्न हो गया जबकि वह मात्र 10 वर्ष की थी । कहा जाता है कि रामानुजन के पिता विवाह में उपस्थित नहीं थे।

रामानुजन की औपचारिक शिक्षा का क्रम तो पहले ही टूट चुका था। अब विवाह हो जाने से गृहस्थ जीवन व्यतीत करने की भी जरूरत आ पहुंची थी। उधर माँ-बाप की आर्थिक हालत तो पहले से ही खस्ता थी। अतः यह स्वाभाविक था कि रामानुजन कोई काम काज करके कुछ पैसे कमाये और अपनी दैनिक आवश्यकताओं के लिए मां-बाप पर निर्भर न रहे। इसीलिए वह धनोपार्जन की चिंता करने लगे।

वह सोचते थे कि यदि कोई ठिकाने का काम मिल जाये तो मां-बाप का सहारा नहीं तकना पड़ेगा, और उनका दबाव कम होने से वे अपनी गणित संबंधी साधना भी यथावत चलाते रहेंगे।

लेकिन नौकरी खोजने में उन्हें बड़ा संघर्ष करना पड़ा और बहुत सी मुसीबतें झेलनी पड़ीं। आज अस्सी वर्ष बाद भी युवकों की यह समस्या ठीक वैसी ही है, हालांकि जमाना कहीं से कहीं जा पहुँचा। घरेलू अध्यापन (Tuition) के काम में भी रामानुजन को सफलता न मिल सकी क्योंकि "ग्राहक" की रुचि ज्ञान में नहीं, बल्कि इम्तहान पास करने में होती थी।

अतः रामानुजन को नौकरी के लिए कुछ प्रतिष्ठित व्यक्तियों के सामने उनकी कृपादृष्टि और मेहरबानी के लिए हाथ फैलाने के अलावा कोई अन्य उपाय नहीं सूझा। वह तिरूकोयलूर

*इनका स्वर्गवास 13 अप्रैल, 1994 को हुआ।

के डिप्टी कलक्टर रामास्वामी अय्यर से मिले। अय्यर जी ने 1907 में भारतीय गणित परिषद् (I.M.S.) की स्थापना की थी। वे गणित के वास्तविक महत्व को समझते थे और रामानुजन को किसी दफ्तर की बाबूगिरी में उलझाकर उसकी गणित साधना में कमी करने का पाप अपने सिर पर नहीं लेना चाहते थे। अतः उन्होंने एक पत्र के साथ रामानुजन को मद्रास में प्रो. पी. वी. शेषु अय्यर के पास भेज दिया। उनकी कृपा से रामानुजन ने एक दफ्तर में अस्थाई पद (leave vacancy) पर काम किया, लेकिन थोड़े दिन बाद फिर बेक़ार हो गये।

उस समय (लगभग 1910-11) में तो रामानुजन के ऊपर मुसीबतों का पहाड़ टूट पड़ा। उनको एक-एक दिन पहाड़ सा लगता। ट्यूशन की खोज में यहाँ वहाँ भटकते थे। पर कुछ नहीं हुआ। वह अक्सर कहते थे कि निर्धनता में मरना ही उनके भाग्य में लिखा है। अक्सर पेट भर भोजन नहीं मिल पाता और रात को भूखे ही सो जाते। खुराक पूरी न मिलने के कारण वह बीमार पड़ गये। उधर मकान मालिक ने भी घर खाली करने को विवश कर दिया। अतः सामान बांधकर एक मित्र के यहाँ अचानक पहुँच गये। लेकिन बिगड़ती हुई तबियत की वजह से बाद में घर (कुम्भकोणम) चले गये।

इस प्रकार हम रामानुजन को एक बहुत बड़े जीवन संघर्ष में उलझा हुआ पाते हैं, विशेष रूप से उनके 11वीं दर्जे में असफल होने के बाद से। लेकिन ऐसा लगता है कि यही पाँच-छह वर्ष की अवधि (लगभग 1905 से 1911 तक) वह समय था जब रामानुजन की प्रतिभा शिखर पर थी, और वे उत्कृष्ट रूप से बौद्धिक कार्य में सक्रिय थे। गणितीय क्षेत्र में उनकी सृजनात्मक शक्ति पूरे जोर शोर से काम कर रही थी और वे गणित में नित्य नये नये परिणाम बराबर प्राप्त करते जा रहे थे।

परीक्षा में असफल होने की निराशा उनकी सक्रियता को स्तब्ध न कर सकी। दबोच देने वाली निर्धनता और माँ-बाप की डाट-डपट उनको अपनी लगन से न हटा सकी। हाड़-मांस की बनी प्रेयसी उनके गणित प्रेम को न तोड़ सकी; नौकरी न मिल पाने का मानसिक कष्ट उनके लिये कण्टक न बन सका। पेट में चूहे बिलबिलाते रहे पर गणित की दुनिया में खो जाने की आदत से, उनका ध्यान विचलित न कर सके। यहाँ तक कि शारीरिक

अस्वस्थता और बीमारी भी उन्हें गणित की सृजनात्मक सुंदरता के आनंद में विभोर होने से न रोक सकी।

विशेष ध्यान देने योग्य बात तो यह है कि उनके गणितीय शोधों का कार्य किसी प्राध्यापक की देखरेख में नहीं चल रहा था बल्कि केवल स्वयं के अध्ययन का परिणाम था।

मालूम पड़ता है कि कोई अदृश्य शक्ति उनमें कार्य कर रही थी या कोई अन्तर्ज्योति उनका मार्गदर्शन करती थी । तभी तो इतनी अंधकारमय दुनिया और जीवन में भी वे अपनी एकाग्रता से विचलित नहीं हुए। बाहरी शक्तियां और आर्थिक, सामाजिक, शारीरिक, व्यक्तिगत और यहाँ तक कि मानसिक परिस्थितियाँ भी उनके नई खोज करने के आवेग को न कुचल सकीं। उस अदृश्य शक्ति के पोषण से उन्हें स्फूर्ति मिलती थी और वे प्रज्ज्वलित ज्ञान के क्षेत्र में अपने उज्जवल अन्तर्ज्ञान का प्रकाशमय चमत्कार दिखा देते थे।

रामानुजन कहा भी करते थे कि नामगिरि देवी स्वप्न में आकर उन्हें गणित के सूत्र बतला जाती थी। लेकिन आश्चर्य यह है कि देवी जी लोगों को सुबुद्धि देने में कंजूसी क्यों कर रही थी, जिसके कारण रामानुजन को इतनी मुसीबतें उठानी पड़ीं। क्योंकि यह मानते हुए भी कि रामानुजन ने विपरीत परिस्थितियों में इतना ऊँचा कार्य किया, यह नहीं कहा जा सकता कि कार्य में जरा भी अवरोध नहीं हुआ था। उपलब्धि एक सापेक्ष बात है और गणितीय परिणामों की उच्चता की कोई सीमा नहीं है। सामान्य तर्क यही बताता है कि यदि परिस्थितियाँ विपरीत न होतीं, तो रामानुजन का कार्य और ऊंचा तथा ज्यादा होता। आखिर बेहतर परिस्थितियों की बात सोचकर ही उनका इंग्लैण्ड जाना ठीक समझा गया (आगे का वर्णन देखिये)।

फिर भी यह एक विवादास्पद विषय है कि जीवन और संसार की दशा और उपलब्धियों के बारे में हम लोग स्वयं स्वतंत्र निर्णयात्मक कर्ता हैं, या कोई अदृश्य शक्तियों का नियंत्रण हैं।

मालूम पड़ता है कि नौकरी छूटने और बीमार पड़ने से रामानुजन काफी हताश और निराश हो चुके थे। इसलिए घर जाने के पहले उन्होंने अपनी दो नोटबुकें भी मित्र को "यदि मैं वापिस न आऊं इत्यादि" इन शब्दों के साथ सुपुर्द कर दी थीं। लेकिन सौभाग्य

से तबियत ठीक हो गई और वे मद्रास वापिस लौट आये। परन्तु रोजी रोटी की समस्या तो अभी भी हल नहीं हुई थी। बच्चों को पढ़ाकर थोड़े बहुत पैसे मिल जाते थे। रामानुजन नेल्लूर के कलक्टर दीवान बहादुर आर. रामचंद्र राव से मिले और उनसे कुछ काम दिलाने की प्रार्थना की ताकि "पेट भर अन्न मिल जाये और मैं अपना शोध कार्य जारी रख सकूं"। राव की गणित में कुछ रुचि थी और वे रामानुजन के कार्य से प्रभावित हुए। उस भले आदमी ने रामानुजन को कुछ दिनों तक माहवारी खर्च भी भेजा। लेकिन लोगों ने इस तरह के दान पर जीवित रहने में आत्मसम्मान का प्रश्न उठा दिया। वे भूल गये कि उस परिस्थिति में भगवान ने किसी को "निमित्त मात्र" बनाकर मदद की तो इसमें क्या हर्ज था।

भाग्योदय और जीवनचर्या का शिखरत्व

रामानुजन का प्रथम शोध निबंध बरनूली संख्याओं (Bernoulli's Numbers) पर था जो भारतीय गणित परिषद् की पत्रिका (J.I.M.S) में दिसम्बर 1911 में प्रकाशित हुआ था। गणितज्ञ और गणित में रुचि रखने वाले उसके कार्य का महत्व समझते थे। रामास्वामी अय्यर और शेषु अय्यर उसकी मदद करने के उत्सुक थे। लेकिन इम्तहान, विश्वविद्यालय की उपाधि, छात्रवृत्तियों के नियम, कानूनी बंधन इत्यादि सामाजिक और शैक्षणिक रीति-रिवाज इतने दृढ़ थे कि उचित रूप में वास्तविक मदद करना आसान न था।

भाग्य से मद्रास पोर्ट ट्रस्ट के दफ्तर में एक जगह खाली थी और वहाँ के प्रबंधक एस. नारायण अय्यर गणितज्ञ के साथ रामास्वामी अय्यर और शेषु अय्यर के मित्र भी थे। अतः जब गंगा, यमुना, सरस्वती की तरह इन अय्यरों की त्रिवेणी का संगम हुआ तो रामानुजन के भाग्य का सितारा चमक गया।

उधर पोर्ट के अध्यक्ष फ्रांसिस स्प्रिंग (Spring) ने सहर्ष अनुमोदन कर दिया। बात बन गयी, और रामानुजन को 25 रुपये प्रतिमाह की नौकरी मिल गई। वास्तव में स्प्रिंग ने दबे हुए रामानुजन को ऊपर उठाने में "स्प्रिंग" (कमानी) का काम करके अपने नाम की सार्थकता

सिद्ध कर दी। फलतः रामानुजन के जीवन में भी एक बसंत (Spring) आया।

हालांकि एक अभूतपूर्व प्रतिभावान गणितज्ञ के लिये दफ्तर की बाबूगिरी किसी भी मापदंड से एक अच्छा कार्य नहीं कहा जा सकता, फिर भी यहां तो "मरता क्या न करता" वाली बात थी। रामानुजन को इस नियुक्ति से संतोष था, क्योंकि पेट भरने के लिये एक साधन हाथ में आ गया। रामानुजन कोई ऐश और आराम की जिन्दगी तो बिताना चाहते नहीं थे। सबसे बड़ी बात तो यह थी की उनकी इस बहाली का उद्देश्य ही उनको अपने गणित-कार्य में मदद करना था।

वास्तव में अध्यक्ष महोदय स्प्रिंग स्वयं ही उनके गणित-कार्य में दिलचस्पी लेते थे। मुश्किल यह थी कि उनको पूरे परिवार का भी भरण पोषण करना पड़ता था। पैसों की कमी थी। अत. गणित करने के लिये यहां-वहां से पुराने कागज बटोरकर काम चलाते थे। स्वामी विवेकानन्द ने कहा था कि पश्चिमी सभ्यता का आदर्श ज्यादा से ज्यादा प्राप्त करने का है, जबकि भारतीय आदर्श अपरिग्रह अर्थात् कम से कम में जीवन निर्वाह करने का है। रामानुजन की भी अपनी आवश्यकताएँ न्यूनतम थीं।

जब जीवन निर्वाह की मूल समस्या थोड़ी सी हल हो गई, तो फिर रामानुजन ने अपने गणित-कार्य के बारे में कैम्ब्रिज के प्रख्यात गणितज्ञ प्रो. जी. एच. हार्डी (Hardy) को सन् 1913 के प्रारंभ में एक पत्र लिखा, और साथ में अपने अनेक सूत्र (formulas) नमूने के रूप में भेज दिये। इस पत्र से एक ऐसे सम्पर्क का श्रीगणेश हुआ जो, रामानुजन की जीवनचर्या में सबसे बड़ा मोड़ लाया।

इस पत्र से कैम्ब्रिज में खलबली मच गई। क्योंकि कुछ परिणाम (फार्मूले) तो प्रो. हार्डी के लिये भी नए थे जिनको एक "सर्वोत्तम कोटि का गणितज्ञ" ही लिख सकता था। मानो रामानुजन के गणित हीरे के लिए हार्डी जौहरी मिल गया हो।

प्रो. हार्डी ने तुरन्त वास्तविक रामानुजन की खोज कर ली, और उसकी विलक्षण प्रतिभा को पहचान लिया। जरूरत थी तो इस बात की कि रामानुजन गणित की नवीनतम प्रगति से परिचित हों ताकि उनकी कार्य-क्षमता बढ़ सके। अतः हार्डी ने रामानुजन को अविलम्ब कैम्ब्रिज बुलाने का निर्णय लिया। लेकिन मामला इतना सरल न था क्योंकि माता-पिता के

विरोध का डर, जाति-बिरादरी का चक्कर, धार्मिक रूढ़िवाद, समुद्र यात्रा से वरुण देवता का अपमान, और यहाँ तक कि श्रेय लूटने का प्रश्न इत्यादि समस्याएँ सिर उठाने लगीं।

इसी बीच भारतीय ऋतु-विज्ञान (Metereology) विभाग के अध्यक्ष डा. जी. टी. वाकर (Walker), एफ. आर. एस. मद्रास आये तो एफ. स्प्रिंग ने उनसे रामानुजन के कार्य की चर्चा की। वाकर महोदय ने मद्रास विश्वविद्यालय को पत्र लिखा कि "रामानुजन को अपना पूरा समय, आजीविका की चिंता किये बिना, गणित में लगाने की सुविधा दी जाये"।

डा. वाकर की सिफारिश पर मद्रास विश्वविद्यालय ने रामानुजन को 75 रुपये प्रतिमाह की छात्रवृत्ति मंजूर की। मालूम पड़ता है कि आज की तरह उन दिनों भी सिफारिश से काम जल्दी होता था। बाद में रामानुजन की विशेष योग्यता के कारण शोध-छात्रवृत्ति के लिये आवश्यक स्नातकोत्तर उपाधि (एम. ए.) की शर्त को भी ताक में रख देना पड़ा। मई 1913 में रामानुजन विश्वविद्यालय के शोध छात्र बन गये।

इस प्रकार इधर भारत में रह रहे स्प्रिंग और वाकर ने रामानुजन को पचड़े से बाहर निकाल दिया, तो उधर इंग्लैंड के हार्डी और नेविल (E. H. Neville) इत्यादि उनको कैम्ब्रिज बुलाकर गणित जगत में और अधिक चमकाना चाहते थे। जब पृथ्वी पर ये जोरदार प्रयत्न चल रहे थे, तो स्वर्ग में स्थित नामगिरि देवी ने भी रामानुजन को जीवन चर्चा के शिखर पर पहुंचा दिया। उसने रामानुजन की माता को स्वप्न में आदेश दे दिया कि वह अपने पुत्र के जीवन-लक्ष्य की प्राप्ति में बाधा न बने।

जब विरोध समाप्त हो गया, और शुभचिन्तकों ने समझ लिया कि रामानुजन का विदेश जाना सुरक्षित ही नहीं, बल्कि सब तरह से सबके हित में है, तो रामानुजन को इंग्लैंड पहुंचने में देर न लगी। प्रो. नेविल, जो उन दिनों गणित पर व्याख्यान माला देने भारत आये थे, ने जनवरी 1914 में मद्रास विश्वविद्यालय को एक विशेष पत्र लिखा। इसमें उन्होंने लिखा था कि "रामानुजन की प्रतिभा का आविष्कार गणितीय जगत में हमारे समय की सबसे रोचक घटना सिद्ध होने वाली है।" साथ ही विश्वविद्यालय से रामानुजन की प्रतिभा को और भी अधिक खिलने में सहयोग करने को कहा। उधर सर स्प्रिंग भी मद्रास के गवर्नर से मिल चुके थे और उनको एक पत्र भी लिखा था जिसमें सरकार से रामानुजन को आर्थिक सहायता के लिये स्वीकृति का अनुरोध किया गया था।



चित्र 5.2 विदेश में रामानुजन

बाद में सारी औपचारिकताएँ पूरी हुईं। मद्रास विश्वविद्यालय ने सरकार की सहमति से रामानुजन को इंगलैंड में पढ़ने के लिये 250 पौंड प्रति वर्ष की छात्रवृत्ति (यात्रा खर्च के अतिरिक्त) मंजूर की। रामानुजन के अनुरोध पर इसमें से 60 रुपये मासिक उनके पिता के पास कुम्भकोणम भेज दिये जाते थे। भारत में तो कोई विद्वान ऐसा था नहीं जिससे गणित में रामानुजन को कुछ सीखना हो।

तीन हफ्ते की समुद्री यात्रा के बाद रामानुजन अप्रैल, 1914 में इंगलैंड पहुंचे जहाँ कैम्ब्रिज के विख्यात ट्रिनिटी (Trinity) कॉलेज में जुलाई में उनका दाखला हो गया। इस प्रकार अन्ततोगत्वा रामानुजन सही जगह पहुंच गये जहाँ उन्हें आठ वर्ष पूर्व होना चाहिए था। दुर्भाग्य से इसी बीच प्रथम विश्वयुद्ध (World War) छिड़ गया और अनेक गणितज्ञ कैम्ब्रिज विश्वविद्यालय छोड़कर युद्ध संबंधी सेवा में लग गये। फिर भी सुप्रसिद्ध प्रो. हार्डी ने रामानुजन का मार्गदर्शन किया। हार्डी ने स्वीकार किया कि रामानुजन को उन्होंने जितना सिखाया "उससे कहीं ज्यादा मैंने उनसे सीखा"। हार्डी के शब्दों में रामानुजन "आधुनिक काल के सर्वश्रेष्ठ गणितज्ञ हैं" जिनकी अनोखी योग्यताएं और विधियां परम्परागत पद्धति से शिक्षित एक यूरोपीय गणितज्ञ से एकदम भिन्न कोटि की हैं।

यह कहा जा सकता है कि कैम्ब्रिज का जीवन रामानुजन के लिये एक व्यावसायिक (professional) गणितज्ञ की तरह था। वहां के शैक्षणिक दृष्टि से अनुकूल वातावरण में उन्होंने लगभग पांच वर्ष बिताए। दिन-रात गणित के बारे में सोचते रहने की आदत तो उनके साथ स्वाभाविक थी। नतीजा यह हुआ कि वहाँ रहकर उन्होंने अनेक नये, महत्त्वपूर्ण और एक से बढ़कर एक प्रमेयों और सूत्रों को प्राप्त किया। दर्जनों शोधपत्र प्रकाशित हुए। जैसी कि आशा की जाती थी, रामानुजन ने गणितीय कार्य में असाधारण अन्तर्दृष्टि और प्रवीणता प्रदर्शित की।

वहाँ अपने प्रवास की अवधि में रामानुजन की योग्यताओं का शीघ्र यथोचित सम्मान किया गया। कैम्ब्रिज विश्वविद्यालय ने शोध कार्य के कारण उन्हें 1916 में बी. ए. की उपाधि दी जिसे वे भारत में बिना परीक्षा पास किये प्राप्त नहीं कर सकते थे। फरवरी 1918 में रॉयल सोसायटी के सदस्य (Fellow) चुने गये जो उस समय अंग्रेजी साम्राज्य के वैज्ञानिक जगत में सर्वोच्च सम्मान माना जाता था। उसी वर्ष अक्टूबर में रामानुजन

को ट्रिनिटी कॉलेज के सदस्य चुने जाने का सम्मान मिला जिसके अन्तर्गत उन्हें 6 साल तक 250 पौंड वार्षिक मानदेय मिलने का प्रावधान था। उधर मद्रास विश्वविद्यालय ने भी उसी वर्ष के अन्त (अर्थात् दिसम्बर 1918) में रामानुजन को एक पत्र भेजा जिसमें अप्रैल 1919 से पांच साल के लिये रामानुजन को 250 पौंड सालाना सहायता की बात कही गयी थी। लेकिन उस समय इस बात को कोई नहीं जानता था कि रामानुजन अप्रैल 1920 में ही संसार छोड़कर चल बसेंगे, और उन पर पांच-छह वर्षों तक विदेशी मुद्रा की बौछार करने के स्वप्न अधूरे रह जायेंगे।

रामानुजन ने जो परिणाम, प्रमेय, और प्रश्नों के हल प्राप्त किये उनमें से कुछ नमूने यहां प्रस्तुत करते हैं, ताकि पाठक उनके गणित का दिग्दर्शन तो कम से कम कर लें, भले ही उनको सिद्ध न कर सकें।

1. संख्याओं के प्रतिरूप

$3^3 + 4^3 + 5^3 = 6^3$

$2^4 + 4^4 + 7^4 = 3^4 + 6^4 + 6^4$

2. यदि $(a+b+c) = 0$

तो $a^4+b^4+c^4 = 2(ab+bc+ca)^2$

3. आसन्नमान

$\pi=\frac{355}{113}\left(1-\frac{0.0003}{3533}\right)$, जो कि 14 दशमलव तक सही है।

$e^{\pi\sqrt{22}} = 2508952$, जिसमें त्रुटि 1/500 से कम है।

4. समीकरण हल करो–

(i) $x^2=y+a, y^2=z+a, z^2=x+a$

रामानुजन का उत्तर x=9, y=4.

(ii) $x^2 = y + a,\ y^2 = z+a,\ z^2 = x+a$

रामानुजन ने इनको पूर्णतया हल किया है।

5. श्रेणियाँ–

(i) $1-\frac{1}{4}+\frac{1}{7}-\frac{1}{10}+\frac{1}{13}-\frac{1}{16}+------=\frac{\pi}{3\sqrt{3}}+\frac{1}{3}\log 2$

(ii) $\frac{1}{1^4}+\frac{1}{2^4}+\frac{1}{3^4}+\frac{1}{4^4}+\frac{1}{5^4}+------=\frac{\pi^4}{90}$

(iii) $\tan x = \frac{1}{(a-x)}-\frac{1}{(a+x)}+\frac{1}{(3a-x)}-\frac{1}{(3a+x)}+-----$

जहाँ $a = \pi/2$

6. विविध -

(i) $(1-2x + 2x^4-2x^7 + 2x^{16} ------)^{-1}$ में x^n का गुणांक (coefficient) निकालो।

(ii) यदि $ab = \pi^2$, और $(b/a) = k^4$, तो $[\frac{1}{2} + e^{-a} + e^{-4a} + e^{-9a} + ...]$

$= k\,[\frac{1}{2} + e^{-b} + e^{-4b} + e^{-9b} + ----]$

(iii) $\int_0^\infty \frac{dx}{(1+x^2)(1+r^2x^2)(1+r^4x^2)......} = \frac{\pi}{2(1+r+r^3+r^6+r^{10}+......)}$

भगवान को गणितज्ञ की आवश्यकता

जनवरी 1919 में रामानुजन ने मद्रास विश्वविद्यालय को लिखा कि "अपनी बीमारी के कारण पिछले दो सालों में मैं उतना गणित नहीं कर सका जितना पहले करता था।" वास्तव में वे कैम्ब्रिज में सख्त मेहनत करते थे। लेकिन खाने पीने की समस्या उन्हें हमेशा तकलीफ देती रही। उन जैसे शुद्ध शाकाहारी के लिये वहाँ उचित वस्तुएँ मिलनी आसान न थीं। संयमी, रूढ़िवादी और विशेष रुचि के कारण वे अपना खाना स्वयं पकाते थे।

मालूम पड़ता है कि गणित में विभोर रहने के कारण उन्होंने अपने खाने पीने पर उचित ध्यान नहीं दिया। वहाँ पत्नी और परिवार वाले तो थे नहीं जो इस लापरवाही का ख्याल करते। परिणाम यह हुआ कि उनका स्वास्थ्य गिरता गया और वे कमजोर होते

(7) If $2u = 11 + \frac{1}{x}\cdot\left\{\frac{(1-x)(1-x^2)(1-x^3)\cdots}{(1-x^5)(1-x^{10})(1-x^{15})\cdots}\right\}^6$

and $2v = 1 + \frac{1}{x^{1/5}}\cdot\left\{\frac{(1-x^{1/5})(1-x^{2/5})(1-x^{3/5})\cdots}{(1-x)(1-x^2)(1-x^3)\cdots}\right\}$

then $\sqrt[5]{\sqrt{u^2+1}-u} = \sqrt{v^2+1}-v$

$$= \frac{\sqrt[5]{x}}{1+}\,\frac{x}{1+}\,\frac{x^2}{1+}\,\frac{x^3}{1+}\,\frac{x^4}{1+}\cdots$$

(8) If $2u = 11 + 125x\cdot\left\{\frac{(1-x^5)(1-x^{10})(1-x^{15})\cdots}{(1-x)(1-x^2)(1-x^3)\cdots}\right\}^6$

and $2v = 1 + 5x\cdot\left\{\frac{(1-x^{25})(1-x^{50})(1-x^{75})\cdots}{(1-x)(1-x^2)(1-x^3)\cdots}\right\}$

then,
$$\frac{\sqrt{5}}{1+\left(\frac{\sqrt{5}-1}{2}\right)\sqrt[5]{\sqrt{u^2+1}-u}} = \frac{\sqrt{5}}{1+\left(\frac{\sqrt{5}-1}{2}\right)\left(\sqrt{v^2+1}-v\right)}$$

$$= \frac{1+\sqrt{5}}{2} + \frac{x}{1+}\,\frac{x^5}{1+}\,\frac{x^{10}}{1+}\,\frac{x^{15}}{1+}\cdots$$

(9) If $\alpha\beta = \frac{\pi^2}{5}$, then

$$\left\{\left(\frac{\sqrt{5}+1}{2}\right)^5 + \left(\frac{e^{-2\alpha/5}}{1+}\,\frac{e^{-2\alpha}}{1+}\,\frac{e^{-4\alpha}}{1+}\cdots\right)^5\right\}$$

$$\times\left\{\left(\frac{\sqrt{5}+1}{2}\right)^5 + \left(\frac{e^{-2\beta/5}}{1+}\,\frac{e^{-2\beta}}{1+}\,\frac{e^{-4\beta}}{1+}\cdots\right)^5\right\}$$

$$= 5\sqrt{5}\left(\frac{\sqrt{5}+1}{2}\right)^5$$

चित्र 5.3 रामानुजन की नोटबुक का कुछ अंश

गये। वास्तव में उन्हें क्षयरोग ने जकड़ लिया था। उस रोग ने उन्हें कब पकड़ लिया था, यह कहना तो कठिन है, लेकिन प्रारम्भिक अवस्था में न उसकी कोई जांच हुई और न ही उपचार हुआ, ऐसा लगता है।

चिकित्सा के लिए 1917 की गर्मियों में वे पहले एक नर्सिंग होम में और बाद में अनेक अस्पतालों में रहे किन्तु रोग से छुटकारा न पा सके। इससे उनके गणित कार्य पर असर पड़ा, जैसा कि उन्होंने बाद में स्वयं (पत्र में) स्वीकार किया। विचार यही हुआ कि स्वदेश की अनुकूल जलवायु, पारिवारिक वातावरण और घरेलू आराम उनके लिए जरूरी है। अतः थोड़े से अच्छे होने पर मार्च 1919 में वे भारत वापिस आ गये।

प्राध्यापक हार्डी ने तो 1918 में ही कह दिया था कि रामानुजन एक ऐसी ऊंची प्रतिष्ठा और ख्याति के साथ भारत लौटेंगे जैसी किसी अन्य भारतीय ने कभी नहीं पाई है।

बम्बई बन्दरगाह पर उतरने के बाद वह रेलगाड़ी से मद्रास पहुँचे जहाँ उनका भव्य स्वागत किया गया। कुछ महीने बाद भारतीय गणित परिषद् (I.M.S.) ने उन्हें मानद सदस्य बना लिया।

थोड़े दिन मद्रास में रहने के बाद वह कुछ समय के लिये कोडुमुडि स्थान में, और फिर कुम्भकोणम में रुके। बाद में फिर मद्रास लौट आये। लेकिन उनके स्वास्थ्य में कोई सुधार नहीं हुआ और वे दिन प्रतिदिन क्षीण होते गये। वे अक्सर ऐसे शब्द कहते थे जिससे लगता है कि उनको अपनी जीवन यात्रा की समाप्ति का नोटिस मिल गया हो। फिर भी वह गणित कार्य में अपना उत्साह दिखाते रहे। बीमारी की हालत में भी उन्होंने मोक थीटा फलनों (Mock Theta Functions) पर उच्चकोटि का शोध कार्य किया, और प्रो. हार्डी के पास उसे भेजा (जनवरी 1920 में)।

कहा जाता है कि उनका यथा सम्भव सर्वश्रेष्ठ उपचार चल रहा था, और दवादारू तथा सेवा सुश्रुषा में कोई कमी नहीं थी। लेकिन रोग उग्र होता गया और अन्त में उसने 26 अप्रैल 1920 को रामानुजन के प्राण हर लिये।

मालूम पड़ता है कि भगवान को उन जैसे उच्चकोटि के गणितज्ञ की तुरंत अति आवश्यकता थी, अन्यथा यहाँ का बहुत सा गणित कार्य अधूरा छोड़कर मात्र 32 वर्ष की आयु में वह स्वर्ग क्यों सिधारते। बाद में संसार के सैकड़ों बड़े बड़े शोधकर्त्ता उनके कार्य को पूरा करने

और उसे आगे बढ़ाने में लगे रहे और अब भी लगे हुए हैं। अभी हाल में ही उनके एक सूत्र पर आधारित संगणक विशेषविधि (Computer Algorithm) लगाकर π का मान करोड़ों दशमलव स्थानों तक निकाला गया है। किसी ने ठीक ही कहा है कि हस्त-कौशलीय योग्यता (manipulative ability) में श्रीनिवास रामानुजन (1887-1920) सर्वश्रेष्ठ गणितज्ञ थे, जिनकी दक्षता की तुलना लियोनार्ड ऑयलेर (Euler, 1707-1783) और कार्ल जेकोबी (Jacobi, 1804-1851) से की जा सकती है। शुद्ध गणितीय प्रतिभा के 0 से 100 तक के माप में प्राध्यापक हार्डी ने अपने को 25, जे.ई लिटिलवुड को 30, डेविड हिल्बर्ट को 80, और रामानुजन को पूरे 100 अंक दिये।

इस गणितीय पूर्णता प्राप्ति के बाद उनको यहाँ दीर्घायु होकर रहने की जगह शायद यही उचित समझा गया कि अब वे दूसरे लोक की पूर्णता का आनन्द लें। अतः जगत गुरु शंकराचार्य और स्वामी विवेकानन्द की तरह अल्पायु में ही अपना निर्धारित जीवन-उद्देश्य (life - mission) पूर्ण करके उस अज्ञात पूर्ण से जा मिले।

ओम् पूर्णमदः पूर्णमिदं पूर्णात् पूर्णमुदच्यते।
पूर्णस्य पूर्णमादाय पूर्णमेवावशिष्यते ।।

मंत्ररूपी इस वैदिक शान्तिपाठ के साथ यह अध्याय और उसके साथ पुस्तक की भी समाप्ति करते हैं।

ओम् शान्तिः! शान्तिः! शान्तिः!

revision is called "The Roman Psalter." However, Jerome's connection with it is now called in question. But by a decree of Pope Damasus it became the official version of the Psalter in the churches of Rome and Italy and so remained until Pius V (1566-72). It is still the official Psalter in St. Peter's at Rome, and at Milan, and is employed in part in the Roman missal, and in one place in the breviary in the Invitatory Psalm 94 (95).

About the end of A.D. 384 Pope Damasus died, and in 385 Jerome left Rome for Palestine. After a prolonged study of its topography and cities, and a tour of Egypt, he, with his associates, settled in Bethlehem. Here in 389 he founded two religious houses, over one of which he presided for at least fifteen years Over the other, founded for nuns, Paula, a devout widow, was in charge until her death.

Somewhere during these years, probably about A.D. 387 in response to requests, Jerome again revised the Psalter In this work he used, in addition to the Septuagint, the Greek text of Origen's Hexapla, together with some of his critical symbols. This revision became known later as "the Gallican Psalter," for it was first adopted in Gaul It was finally accepted and decreed to be the official version of the Psalter in the Latin church, where it remains today as the version of the Psalms embodied in the Vulgate. Jerome also translated or revised other books of the Old Testament on the basis of the Septuagint, but only the Psalter and Job of this revision have been preserved.

More and more Jerome came to see that a Latin version of the Old Testament would accord better with the original Hebrew if it were a new translation instead of merely a revision of a version based on the Septuagint In his controversies with Jews, he came to realize the futility of appealing to the Septuagint, for they denied that it truly represented the original Hebrew. Jerome's friends, too, were urgent that he undertake a new translation direct from the Hebrew. In response to these requests, as he says in his prefaces, he began little by little to translate the separate books, and to send copies of them to his friends. Thus the great Biblical scholar was led gradually and almost casually into doing piecemeal what later became his great lifework.

He first translated (A.D. 390) the easier historical Hebrew of the Old Testament, the books of Samuel and Kings. These he prefaced

with the "helmeted prologue" (*prologus galeatus*), so called because in it Jerome assumes the role of one armed to meet antagonists of his version. It is practically an introduction to his whole work of translation.

The next task that he set himself was a new translation of the Psalter, although he had already twice revised it. The prophets and Job followed in order, then Ezra and Chronicles—all these translations falling within the years A D 390-396 For two years he had to lay aside the work because of severe illness. He was able to take up his task again in 398 and translate Proverbs, Ecclesiastes, and Song of Songs; it is said that he did Ecclesiastes as a sort of diversion during his convalescence The Pentateuch followed in order, and in A D. 404 Joshua, Judges, Ruth, and Esther. The death of Paula, head of the convent, occurred in that same year; soon thereafter appeared the apocryphal parts of Daniel and Esther, and later the books of Tobit and Judith translated from the Aramaic These completed Jerome's translation of the Old Testament from the original text He neither revised nor translated Wisdom of Solomon, Ecclesiasticus, the Maccabees, and Baruch

Jerome's personality as reflected in the prefaces to his translations is extremely interesting. His profound scholarship did not deaden his sensitiveness to criticism and opposition For fourteen years (390-404) he had labored almost incessantly to produce a faithful rendering of the Hebrew, but he met, in the main, only keen criticism and the antagonism of churchmen all about him He defended his position in his prefaces, which fairly ring with denunciations of his ignorant, superstitious critics He wielded a sharp pen, possessed a hot temper, and did not fail to combine them in cutting and caustic retorts; one of the famous epithets hurled at his critics was "two-legged asses"[1] He gives us, besides, in these prefaces, an idea of how he worked, what difficulties he encountered, features of the Hebrew text of his time, and how he finally succeeded in a task that gave to the church such a reliable translation of the Hebrew text Jerome asserted his reverence for the Septuagint but at the same time said that his effort was only to render clearly from Hebrew passages that were obscure in the Septuagint and the Old Latin. The conservatives of that day, as of this, clung to the older versions because long use and familiarity

had cast a halo of sanctity about them. But the wisest of the churchmen soon began to recognize the superiority of Jerome's work. Augustine, who had expressed fear of its consequences, now wisely turned to praising it But poor Jerome saw only contention and strife to the time of his death at Bethlehem in A.D 420. He never had the satisfaction of seeing his all-important service to the cause of Biblical learning publicly recognized for anything like its true worth. Yet its merit insured it a hearing and gradually won for it a place of utmost importance in the progress of Christianity. It became the Bible of all Western Christendom; for a thousand years it was practically without a rival. It was carried throughout western Europe; it was the authoritative Scripture of Christian missionaries and teachers; from it vernacular versions were made by scholars who knew little of Hebrew or Greek And even after the acceptance of local translations by the Protestant bodies, the Vulgate continued to be the Bible of Roman Christianity. In the entire history of Bible translations, the importance of the Vulgate is rivaled only by that of the Septuagint.

Jerome did not live to see his success. But that century, the fifth, did not pass by without public recognition of his real service to the understanding of the Bible Then Pope Gregory's commentary on Job (about A.D 580) accepted Jerome's translation as on a par with the Old Latin. In the next two centuries the church fathers quoted both the Old Latin and Jerome's version, the latter gradually gaining the priority The use of the two versions side by side led to the correction of one by the other and finally to the mixing of the texts. Even by the sixth century, this corruption had gone so far that Cassiodorus took steps to correct the current versions by the best old manuscripts. But like other Biblical texts, Jerome's translation was subject to increasing corruption through succeeding centuries until the age of printing Notable revisions were undertaken from time to time Of them an account will be given in Chapter XIII.

The "Vulgate," as Jerome's translation came to be called, is distinguished from the Septuagint notably in that, apart from the books taken over bodily from the Old Latin and the passages confused or corrupted in transmission, it is the work of a single translator This provides a much greater unity of style and method than in the Greek Bible, so that one can with safety make certain generalizations about

the version. Jerome's acquaintance with the Jewish scholarship of his time was a valuable resource, providing numerous insights that enhance his translation. His work, too, possessed a literary quality that was to prove of significance in the history of Western Christendom. Also, his principles of translation were excellent; his effort was, not to equate word for word, but to render the thought of the original in graceful and idiomatic Latin. However, the freedom of his translation has proved a disadvantage for the modern textual critic, for it gives less precise evidence of the wording of the original than a version such, for example, as Aquila's This critical deficiency of the Vulgate is further aggravated by its late date By Jerome's time the Hebrew text of the Old Testament, corrupt as it had become, was long since officially fixed and was approximating the form in which we know it today. So it is that, as compared with the Septuagint, the passages are few where the Vulgate provides clear evidence for correction of an error in the Hebrew text. Nonetheless, it is one of our great ancient versions, whose testimony may not be neglected.

There are thousands of Old Latin and Vulgate manuscripts in the public and private libraries of Europe. Professor Samuel Berger, of Paris, examined more than eight hundred in the libraries of Paris alone. It is thought that the total number will not be less than eight thousand Most of them are late thirteenth- or fourteenth-century documents that possess slight critical value. A large percentage of them are Gospels. All told, the manuscripts are grouped in ten classes (1) Early Italian texts; (2) Early Spanish texts; (3) Italian texts transcribed in Britain; (4) Continental manuscripts written by Irish or Saxon scribes, showing a mixture of two types of text; (5) texts current in Languedoc; (6) other French texts; (7) Swiss manuscripts; (8) Alcuinian revision; (9) Theodulfian revision; and (10) medieval texts. We mention in particular only three of the oldest and most valuable of the manuscripts of the Old Testament· (1) One of the earliest of the Spanish texts is the "Ashburnham Pentateuch," now in the Bibliothèque Nationale at Paris (Nouv. acq Lat 2334), a beautiful Vulgate manuscript of the seventh or eighth century, with pictorial illustrations. (2) Codex Complutensis, in the library of the University of Madrid, Spain, a complete Latin Bible of the ninth or tenth century, of which, however, Ruth, Esther, Tobit, Judith, and I and II Maccabees are from

the Old Latin version. (3) Codex Amiatinus of the whole Bible, in Florence, dating from the beginning of the eighth century; it was copied in England, either at Wearmouth or Jarrow, and carried by Abbot Ceolfrid in A.D. 716 as a gift to the Pope.

The first edition of the Vulgate, as everyone knows, was also the first printed book of importance, the Gutenberg Bible published between 1452 and 1456. The greatness of the achievement cannot be readily exaggerated. Yet as a presentation of the text of the Latin Bible it is very erroneous—Gutenberg had enough to do without undertaking an intensive course of textual criticism! This, then, was the problem bequeathed to subsequent scholarship. The story of the efforts toward an authoritative text of the Vulgate must be left for a subsequent chapter, where more appropriately the entire Bible comes under consideration. Here we must be content with two episodes of the long process. The Latin Bible published in 1590 at the Vatican press by Pope Sixtus V and then, slightly altered, again issued in 1592 by Pope Clement VIII has remained to the present the standard text of the Vulgate as also the authoritative Bible of the Roman Catholic church. But the textual criticism of the sixteenth century is not adequate for today. The need has long been felt for a better collation of all important evidence. In 1907 Pope Pius X assigned to a commission of the Benedictine Order headed by Cardinal Gasquet the task of preparing a critical edition of the Vulgate. With Dom H. Quentin as editor, the following volumes have already been published by the Vatican press: Genesis in 1926, Exodus and Leviticus in 1929, Numbers and Deuteronomy in 1936, Joshua, Judges, and Ruth in 1939, Samuel in 1944, Kings in 1945, Chronicles in 1948, I-II Esdras, Tobit, and Judith in 1950, Esther and Job in 1951, and Psalms in 1953. Since Quentin's death in 1935 the work has been carried on at the Roman monastery of St. Jerome.

CHAPTER VI

The Syriac Bibles

SYRIAC, it is apparent, is the language of the Syrian people. But at this point an inconsistency enters the explanation, for Syria is the land lying northerly from Palestine along the coast of the Mediterranean Sea; yet this is not the homeland of the language we know as Syriac, nor of the Syriac Bibles. Instead Syria in ancient times was inhabited by Arameans, and only relatively late was the now familiar name applied to it. The Arameans, by virtue of the advantages of their location between the great commercial centers of hither Asia on the one hand and the Mediterranean as a highroad to Europe on the other, became the great traders of the ancient world. Through this means their influence spread afar. They were known at the court of the Assyrian monarchs, and with the destruction of the empire their peaceful penetration became one of the significant cultural facts of all this region through succeeding centuries It is to the language of this eastward extension of the Arameans that the name Syriac is applied; in fact, it is sometimes termed Eastern Aramaic.

But there were Israelites in these lands as well Disaster brought them in floods When Samaria fell in 722 B C and the northern kingdom was destroyed, the Assyrian conqueror carried off, we have noted, 27,290 captives whom he settled in the lands about the middle Tigris The ruin of the Jewish state brought similar deportations of thousands of exiles to the plain of Babylonia in 597 and 586 B C. Less spectacular was the relentless pressure of economic need which through all the centuries entailed unrecorded migrations, much as is related of the family of Elimelech in the Book of Ruth. It appears that by Christian times many of the cities of Syria and Mesopotamia had each a Jewish group in its population And presently the same impulse which we have noted as operative in the wealthy Jewish quarter of Alexandria must have manifested itself; the Jews needed a translation of their

Scriptures into the intelligible tongue of daily intercourse, that is, into an Aramaic dialect.

The origin of the Syriac Old Testament has been a matter of prolonged debate, for the Syriac Bible, as long as we have known it, has been a Christian book It contains the New Testament as well as the Old, has come to us through Christian hands, and has been the grounds of Christian exposition and homily Nonetheless, the possibility of a Jewish origin of the Old Testament translation has been entertained for many years, with scholars ranging themselves on one side or the other of the argument But many features of the translation, a striking one of which meets the reader in the very first verse of Genesis, have steadily inclined opinion until now it is freely recognized that the Christian church, in possession as it was of a Syriac Old Testament before the third century A D, had accepted the Jewish translation and made this its own.

The city of Edessa in northern Mesopotamia, situated as it was on the great highway from east to west and destined to be of foremost cultural significance in succeeding centuries, has been considered in the past as the place where this work of translation was carried through. But Kahle argues vigorously that we are to look, instead, to Adiabene, the region lying east of the Tigris River between the two Zab tributaries. There about the middle of the first century A.D. a King Izates and his mother Helena became proselytes to Judaism Helena is celebrated for her piety and her gifts to the Temple in Jerusalem; and Izates, so it is claimed, in loyalty to the religion of his choice inspired the translation of the Hebrew Bible into the language of his kingdom The task was relatively easy, for the translators leaned very heavily on the old Aramaic translation then current in Palestine. Indeed, some passages are little other than transliterations of this western Aramaic into the script of the Syriac Jews; and elsewhere interrelations are frequent

This account gives clarity and meaning at once to our earliest information about the Peshitta, as the translation is called. Theodore of Mopsuestia, in the fifth century, did not know where or when it had been made. Ephraem Syrus, who died A.D 373, made it the basis of an elaborate commentary. He mentions the Syriac Old Testament as widely circulated in the churches of Syria in his time. It had been

translated at so distant a day that some of the words had already become obscure to him, and required extensive comments. Aphraates, a churchman at Mosul, about the middle of the fourth century, quotes passages out of all the canonical books of the Syriac Old Testament, with the exception of Song of Songs, though he gives none from the Apocrypha Then still farther back, just after the middle of the second century, Melito of Sardis cites "the Syrian" in discussing the sacred books. It is not certain, however, that he refers to the Syriac Bible.

Our ignorance of the actual origin of the Peshitta is complicated with yet one further difficult question. It has long been recognized that the translation at many points agrees with the Septuagint as against the Hebrew text Yet this is not the whole situation; often Septuagint and Hebrew agree against the Peshitta, or Hebrew and Peshitta against the Septuagint Nonetheless, the situation is such as to have prompted the serious question whether the Syriac translation was not made from the Greek rather than direct from the Hebrew. But the evidence is of varying force in different parts of the Old Testament. Besides, similarities may have arisen through the work of copyists in the long and ill-regulated course of transcription of the Syriac Bible. Or again, the relationships may in considerable part be due to official revisions that took place in the centuries when the prestige of the Greek Bible was very high among Oriental Christians. In any case, there is in all this no refutation of the view that would make the Syriac originally a Jewish translation.

Fortunately there is, however, a phase of the origin of the Peshitta on which we can be reasonably confident. It is commonly agreed that the translation was not done by a single individual. Just as in the Septuagint, differences of style and of translator's procedure reveal beyond doubt the hands of different workers. And indeed such a view is neither novel nor radical; it was already advanced by Ephraem Syrus, and by Jacob of Edessa, who lived through the second half of the seventh century A D. From such diverse beginning, then, the translation received in course of time the imprint of the scholarship of yet other workers Early in the fifth century, just about the time when Jerome in Palestine was wrestling with the problems of the Latin Bible, a noted Syrian scholar by the name of Rabbula, then Bishop of Edessa, labored to bring out of the growing confusion of variant

Syriac texts one authoritative Bible for his people More than two centuries later, Jacob of Edessa spent nine years in revising the Peshitta Old Testament with the help of the Greek versions.

Of the Septuagintal origin of one Syriac translation there is no doubt whatever. That is the so-called Syro-Hexaplar version, already mentioned. Bishop Paul of Tella on his way to Egypt examined Origen's Hexapla, which after the lapse of more than three centuries since the death of its author was still in the library in Caesarea; then in the course of the two following years, A.D. 616-617, he made a Syriac translation of its fifth column—that is, it will be recalled, of Origen's revised text with his critical marks inserted. These marks Bishop Paul copied carefully into his Syriac version; further, his translation was very literal. For both reasons, it is of immense value to present-day scholars in their study of the Hexapla.

The contents of the Syriac Old Testament cover about the same ground as the Hebrew text Its number of books is twenty-two; but their arrangement varies considerably in different manuscripts. The version current among the Nestorian branch of the Syrian church lacked Chronicles, as did that among the Jacobites at Edessa. But this book is found in the manuscripts of the sixth century, though with a division in most of them at II Chronicles 6:1. Esther is not found in the Nestorian version, nor is Ezra-Nehemiah in that of the Jacobites In this latter, too, Esther, Judith, Ruth, and Susanna form "the Book of the Women." The order of books resembles that in the Septuagint more than that in the Hebrew Bible One is thus led to suspect that here as well as in the text as we now have it, Septuagintal influence was operative In addition to the regular books of the Septuagint and the Hebrew, complete Syriac manuscripts, like the Codex Ambrosianus, contain the Apocalypse of Baruch, IV Esdras, and IV and V Maccabees.

Manuscripts of the Peshitta fall into two great classes, eastern and western, corresponding to the great schism that rent the Syrian church in the sixth century The eastern, or Nestorian, manuscripts are in general more valuable, since their text has been less influenced by the great popularity of the Septuagint in Mediterranean lands. The total extant manuscripts of the version, of both classes, are of considerable number. One of the finest collections is in the British Museum; it was

obtained mainly in 1842 from the monastery of St Mary Deipara, which is situated in the Nitrian desert in Egypt In this collection there is a manuscript of Genesis, Exodus, Numbers, and Deuteronomy which bears a date corresponding to 464 A.D; it is the earliest date on any known manuscript of the Bible. There is also a manuscript from the sixth century containing Isaiah, the Psalms, and other important books The large number of other manuscripts in the collection, of both eastern and western Syrian origin, together cover practically the entire Old Testament and the Apocrypha. Cambridge University has several manuscripts of high importance, among them the great "Buchanan Bible" of the twelfth century that was brought from India, although apparently its ultimate origin was somewhere near Syria It is a complete Bible; it has both Old and New Testaments and the Apocrypha, although the manuscript is much damaged by the course of the years An Italian treasure is the Codex Ambrosianus, of Milan as the name implies, it dates probably from the sixth century, and contains the entire Old Testament. It was published in a photo-lithographic edition in 1876-78 A competent scholar has adjudged it our most valuable authority for the Peshitta text of the Old Testament The Preface to the Psalter in this manuscript says that the Psalms were translated from the Palestinian language into Hebrew and thence into Greek, from which the Syriac translation was made It is of interest that a British Museum manuscript, Codex Rich, makes the same claim in regard to the entire Syriac Old Testament, adding, however, that the Greek text employed for the translation of the Psalter was that of Symmachus. In this connection it may be remarked that one of the notable features of the Syriac Psalter is the freedom with which the superscriptions are omitted or changed—owing, it is thought, to the influence of Theodore of Mopsuestia, a very original and vigorous scholar of Asia Minor about the early fifth century A D There are several Peshitta manuscripts in this country also, notably in Union Theological Seminary and in Harvard University, where among others, it is said, there is "an old and excellent manuscript of the Historical Books and the Wisdom of the Old Testament." The Oriental Institute of the University of Chicago possesses a fragment of the Pentateuch from the sixth or seventh century that contains Exodus 14.21 to Leviticus 25 48.

The critical value of the Peshitta is not small. It was an original translation from the Hebrew, and, even though later worked over and edited in the light of Septuagintal readings, its basic quality as an independent translation persists. It is of uneven value, however, since different books were the work of different translators, still it maintains a somewhat median level. It does not reach the high standard of excellence of the Septuagint in its best parts, nor does it fall to the depths of some of the poorest parts of that version. Its readings almost always give good sense, which, if not found in the original, have been touched up from tradition or some other source The freedom of the translators in the changing of suffixes and paradigm forms violates a modern critic's ideas of exactness The dependence of the Peshitta on the Septuagint is often a difficulty in textual study Where both of them are against the Hebrew, it may be that the Syriac is merely a transcript of the Septuagint, and thus the weight of authority of the two readings is greatly reduced

The Syriac Pentateuch, like that of the Septuagint, is a fair translation of the Hebrew text. Ruth is a paraphrase, Job is quite literal, while Chronicles is expository Almost all the separate books of the Old Testament have been carefully studied, and their critical value has been estimated in monographs published by various scholars of modern times

Nonetheless, basic critical work on the Peshitta still waits to be done In brief, we do not possess a dependable text of the version. The known manuscripts differ, as is the way of manuscripts; and most printed editions are quite uncritical, and misleading in that their fixity attributes to them an authority which they in no way merit. Publication began in 1625, when the Psalter was brought out by Gabriel Sionita, a Maronite, who while widely read in his own native Syriac literature was seriously lacking in qualifications demanded for his difficult task. Although his work has been variously evaluated—it is even charged that he did not take the task seriously, and that he was careless —yet it should be borne in mind that methods of handling ancient texts have greatly developed since the seventeenth century Unfortunately, however, he based his work upon a manuscript which has been adjudged "the worst of all known manuscripts of the Peshitta"; it has been described as "unfortunate both in its birth and in its bringing

up. From the first it contained more errors due to homoioteleuton than any other manuscript here cited; and it was afterward revised by an editor who made corrections in the text and supplied omissions in the margin on a large scale often without any manuscript authority whatever" Decidedly a bad beginning for our printed texts of the Syriac Bible! For the fact is that until recently all subsequent editions of the Peshitta have used but slightly revised recensions of Sionita's text.

However, in this same year Thomas Erpinius of Leiden likewise completed a text of the Psalms which he says he edited from "two very ancient manuscripts" Only one of these has been since identified, it is not at all "very ancient," but only of the fourteenth century. Nonetheless, Erpinius' text has received commendation for its "goodness"

Sionita's Psalter was republished in the Paris Polyglot, for which he edited the complete text of the Peshitta Old Testament, it appeared in volumes six to nine, 1632-45. Then Brian Walton took it over in his London Polyglot of 1657. Several important Syriac manuscripts had in the meantime come into the possession of English scholars, but for some strange reason Walton did not employ them to make a thorough revision He published a sort of excursus containing a lengthy critical apparatus for the Syriac, but the real contribution of working this into the printed text was not made Indeed, it is said that Walton's text is really worse than Sionita's, having introduced a number of fresh errors.

And so the matter stood until 1823, when the British and Foreign Bible Society brought out a new edition, the work of Professor Samuel Lee By this time a wealth of good manuscripts was available; in addition the works of Syrian church fathers were known, and Lee recognized their value as evidence on the Peshitta text But the result has proved disappointing. He showed uncritical judgment in his use of the Syriac fathers, notably of Barhebraeus Still worse, he employed the Polyglot text as the basis of his work, and left the worst of Sionita's mistakes uncorrected. Competent scholars have accordingly dismissed his results as "essentially a reprint of the text of the Paris and London Polyglots"

In 1852 another edition appeared, the work of an American missionary, Reverend Justin Perkins. It was printed at Urumia in Iran For

his text he made use of materials collected during his missionary work in the East, and in many points it is an improvement on previous editions. In particular the Psalter is excellent; "the text is not perfect, but it seems to be as near perfection as that of the best MSS" But elsewhere the text is heavily dependent on Lee's; in fact Chronicles has been taken over *in toto*. As a general judgment, then, the Urumia Peshitta is not regarded more highly than Lee's text and that of the Polyglots.

In 1861 P. de Lagarde issued an edition of the Apocrypha. Then twenty-six years later the Dominicans of Mosul published a Peshitta containing both the Old and New Testaments. It had however a sectarian, rather than a scholarly, purpose; the Catholic missionaries wished to free their communicants from dependence upon the Urumia Bible with its Protestant origin. Nothing has been made public as to the sources employed, and no claim is made for a critical value in the edition. Its purposes are purely "practical" In 1877 an edition of the Psalter had been issued, likewise at Mosul, by Bishop Joseph David Presumably it was incorporated into the complete Peshitta of 1887 and merits the same comment.

In 1892 an "apparatus criticus to Chronicles in the Peshitta version" was published by W E Barnes, who likewise brought out in 1904 an edition of "The Peshitta Psalter according to the West Syrian Text," which was the first critical printing of any part of the Syriac Bible. Barnes does not claim to have done exhaustive work with his sources. "So great, indeed," he says, "is the mass of material that a selection had to be made" Accordingly, he chose ten manuscripts that seemed best suited, and checked occasional readings in four others. Nonetheless, the edition is of very high importance as the first really critical text to be published Yet we must note that Barnes did not aim at establishing the original text of the Syriac Psalter; it was only the West Syrian recension of that text which he published It will doubtless be of great value to the editor who undertakes the larger task, but in itself it is but a step toward that end. Barnes's text was republished with slight alterations by the British and Foreign Bible Society in 1914. In the same year they brought out also an edition of the Pentateuch, based on the Lee text but re-edited by Barnes, Charles W. Mitchell, and John Pinkerton. Whether the Old Testament will now

be completed in the difficult conditions of postwar days remains to be seen

A unique publication of the Peshitta was undertaken by the Jewish scholar, Chaim Heller; he set himself to bring it out in Hebrew characters for the use of Jewish readers who do not know Syriac. Genesis was published in Berlin in 1928 and Exodus in 1929, but unfortunately nothing further has appeared. Heller has used the Lee text but claims to have taken account of "all the different readings in other types of the Peshitta" In the copious notes appended on each page he has adduced also the evidence of the Samaritan sources, the Jewish Targums, the Greek versions, the Vulgate, the Arabic, and the Kennicot and De Rossi collations of the Massoretic text

Then the Oriental Institute of the University of Chicago, some few years after its founding, initiated a "Peshitta project" conceived on an ample scale. Critical texts of the Syriac fathers were first to be determined, and the evidence of these was then to be added to that of the best manuscripts of the Syriac Bible so as to establish a really authoritative critical text of the Peshitta Much work was done on Barsalibi and Barhebraeus. In 1931 an edition of *Barhebraeus' Scholia on the Old Testament, Part 1, Genesis-II Samuel* was published, with critical apparatus. But there the project encountered obstacles, and presently it came to a standstill before ever the problem of the text of the Peshitta was reached.

But the need of a dependable text of the Peshitta continued a prime issue of critical Old Testament study. It found expression in the Congress of the International Organization of Old Testament Scholars in Copenhagen in August, 1953. A committee was appointed, with Professor D. Winton Thomas of Cambridge as chairman, to consider plans, and to make a beginning on the undertaking prior to the following meeting of the Congress three years later

CHAPTER VII

The Targums

THE peoples of Syria in pre-Christian times, we have seen, were Arameans, and their language is known as Aramaic, it was closely related to Hebrew. The Arameans had migrated out of the Arabian desert sometime before the middle of the second millennium B.C.; they settled wherever they could establish themselves all around the Fertile Crescent, and by the eleventh century were in the process of building up important states in Syria The Arameans with whom we are most familiar in Old Testament story are those who had their center in Damascus; in our common translations they are inaccurately called Syrians. Aramaic written material of one sort or another takes us all the way back to the eighth century B C A couple of Aramaic words are quoted in Genesis 31:47, but the earliest Old Testament mention of the language by name is in the story of Sennacherib's attack on Jerusalem, when the Judean officials requested the Assyrian emissaries to speak in Aramaic (II Kings 18 26).

With the passing of the great empires of Mesopotamia, Aramaic spread rapidly, and the Jewish exiles there in course of time found themselves obliged to adopt it as their native tongue. In Palestine the Aramaic triumph was slower, yet it made headway, in part, no doubt, through the influence of Babylonian Jewry but partly also because the Hebrew-speaking community had been dealt a very heavy blow in the catastrophe of 586 B.C It is difficult to say how largely the language had become the common speech of Palestine at any point in the last centuries B C The public reading of the law by Ezra (Nehemiah 8.1-8) is sometimes cited as evidence that Hebrew had passed out of general use; for it is related that as Ezra read, interpreters moved about among the audience explaining the meaning of the words, that is, supposedly, translating the Hebrew into Aramaic But in reality the account may mean no more than that these men acted as Biblical expositors, they

explained and applied the passages that were read. However, the prevalence of Aramaic among the common people, by the first century A.D., is apparent from the number of words and passages in this language quoted in the Gospels, as well as from Jewish sources representative of the usage of that time.

Still, Hebrew lived on in Palestine as a language of common communication. The fact that the Book of Daniel, dating in large part from the second century B C, has a large Aramaic section in an otherwise Hebrew book is typical of the whole mixed situation We remember that when Paul addressed the mob in the Temple after his arrest he "spoke in the Hebrew language"; yet whatever one might wish to deduce from this phrase is qualified by the consideration that the word *gabbatha* is described in John's Gospel as "Hebrew" (John 19:13). The matter is clarified rather from the Jewish sources, which show that Hebrew continued as a living language, not merely a literary relic in the schools, until the final disaster to Jewish national life in the collapse of the revolt of Bar Cochba But side by side with it, Aramaic was also a colloquial tongue dominant in Galilee and among Babylonian Jews whose pilgrimages to Jerusalem had considerable influence in advancing the language. These facts provide a clue to the astonishing events of the Day of Pentecost· "Parthians and Medes and Elamites" and the rest—they were all Jews, and would readily understand Aramaic even when spoken with a Galilean accent (Acts 2.7-12).

This centuries-long process carried an inevitable consequence. Just as in Egypt and elsewhere, the Jewish communities came gradually to need a translation of their Scriptures into the vernacular tongue There is every reason to believe that such translation came about unofficially, and even sporadically, various small communities falling naturally into the habit of interpreting and of orally translating Scripture passages into the common language. These Aramaic translations are called Targums (a late Hebrew and Aramaic word meaning translation; there is a sense in which it would not be inaccurate to speak of the Septuagint as the first of the Targums) In the nature of the situation, it is idle to attempt a dating of the beginnings of these Aramaic translations, but certainly they lie well back in the pre-Christian centuries.

The Targums, then, were at first extemporaneous renderings employed in the synagogue services along with the Hebrew scriptures. Much homiletic material would obviously be included, and so the Targums as we know them are a combination of real translation with a considerable bulk of exegetical paraphrase and other matter aimed at religious instruction Rules were presently evolved for the guidance of the translator; in the synagogue service only one verse of the Pentateuch was to be read from the Hebrew before its Aramaic rendering, but in the Prophets three verses might be so read. It is apparent that these extemporary renderings would presently fall into somewhat fixed form and, through the course of years, by their repetition as the appropriate Sabbath came round would become stereotyped into a somewhat uniform, if still only oral, Targum

It is not known when the translations were first committed to writing Certain traditions would push the process back into pre-Christian times. It is notable that some quotations in the New Testament, e.g, Matthew 27 46 citing Psalm 22·1, accord with readings of the Targums, yet this may indicate no more than the persistence of the oral tradition. The first mention of a written Targum is found in a report (Bab Shab 115.1) that a Targum of Job was confiscated in the first century A D The Jewish authorities would not permit the use of written Targums at that time for synagogue services, but there was no ban on them for private study The Targum of Job was evidently of this latter sort It is thought that Job could not have been the first of all the important Old Testament books to appear in this form, and hence that there must have been written translations of other books long before this time. But the Targums in their present form are of much later date; notwithstanding a large part of their total represents an ancient tradition. Formerly the view prevailed that the fourth or fifth century A D is the earliest date to which they can be ascribed. But more recently attention has been drawn to genuine ancient features and historic allusions indicative of a much greater age and rendering it highly probable that the Targums as we know them are to be linked up with pre-Christian written translations, themselves in turn the crystallization of a very long oral tradition. The written Targums continued to receive accretions through many centuries until their text was at length officially determined, as that of the

Hebrew Scriptures had been long before It is this later material that is commonly cited in support of the usual dating, which however relates not to the original writing but to the final form of the text. A fact of importance is that fragments of a Palestinian Targum that date from as early as the sixth century A D were found among the genizah documents; but obviously these are far from original copies, hence have little relevance for the problem of the beginnings of the written Targum

The great Targums, on the Pentateuch and on the Prophets, attained final form in the Babylonian academies not before the fifth century A D, and became the officially approved translations. But acceptance in Palestine was slow, partly because of the rivalry between the Babylonian and the Palestinian schools and partly because Palestinian Jews had already their own Targum, sanctioned by centuries of use. Not until the ninth century did these Babylonian Targums establish themselves in the West; and the astonishing fact is that by that time they had lost their original *raison d'être*, for the success of Islam had made Arabic the language of the land Their belated recognition was a part of the larger triumph of Babylonian Judaism in its contest through several centuries for intellectual and religious leadership of Judaism The Babylonian Talmud and these Babylonian Targums stand together as symbols of a profound evolution in Judaism. Indeed, the Targums came into Palestinian life, not primarily as translations, but as the crystallization of correct interpretation, as it had been determined in the Babylonian academies

There are several Targums They group themselves according to the divisions of the Hebrew Bible: Targums on the Pentateuch, on the Prophets, and on the Writings

The Pentateuchal Targums are three; in order of importance they are the Targum of Onkelos, the Jerusalem Targum (also known as the pseudo-Jonathan Targum), and the Fragmentary Targum The Targum of Onkelos is that to which reference was made just now; it is sometimes called quite properly the Babylonian Targum. The identity of this Onkelos has long been discussed; the similarity of the name to that of Aquila, the author of the very literal Greek translation of the Old Testament, has repeatedly inspired attempts to equate the two individuals And indeed tradition would lend support to the view,

for according to the Babylonian Talmud he was a proselyte who lived in the first century A.D. But this is of little significance. We have already seen the source of this Targum; the name is certainly a Hebraized form of Aquila, attached to it by the Babylonian scholars apparently with full intention of relating the translation to Aquila's Greek. As part of its official status, the Targum of Onkelos was equipped with a Massorah of its own, paralleling that for the Hebrew text. Commonly the translation is beautifully literal and simple. When the meaning is obscure some explanatory word or clause is interpolated. It is, as stated above, the official interpretation of the Hebrew text.

The Fragmentary Targum consists of only about 850 verses. Its language is the Aramaic of Palestine, and its form is paraphrastic. Formerly scholars believed it had originated in someone's intention to interpolate these verses into the Targum of Onkelos. But once again the genizah finds have contributed to the solution of a debated issue; the Fragmentary Targum, it becomes clear, is a remnant of the old Palestinian Targum.

The Jerusalem Targum is also called the Palestine Targum; this is a natural contradistinction to the epithet of the Targum of Onkelos, but also it indicates the real origin of the work. For the Jerusalem Targum has evolved out of the old Targum of Palestine. It has preserved much of the expository material that characterized the latter, while the actual translation is close to that of Onkelos—apparently substituted for an older rendering. Thus the text is replete with popular stories and marginal notes that have grown up around the text in the course of centuries. The Targum is practically complete, lacking only about a dozen verses. It is sometimes referred to as the Targum of Jonathan on the Pentateuch, that is, pseudo-Jonathan, since the real Targum of Jonathan is the well-known translation of the prophets. The source of the confusion is apparent. The abbreviation "Targum J." was erroneously read "Targum Jonathan" by reason of the familiarity of the latter name.

The Targum of Onkelos was first published, without vowels, at Bologna in A.D. 1482, and with vowels in 1491. The first edition of the Fragmentary Targum was issued in Venice in 1517, and the first printing of the Jerusalem Targum appeared in Venice in 1591.

The Targum to the Prophets is attributed to Jonathan ben Uzziel.

a pupil of Hillel in the first half of the first century A D. But this again is only window dressing. As pointed out above, it continues the Targum of Onkelos and was produced by the Babylonian schools; like Onkelos it came to an official fixity not before the fifth century. A subtle relation to the Onkelos translation has been pointed out in that the name Jonathan is the Hebrew equivalent of Theodotion; the Jewish scholars in Babylonia apparently by this means undertook to tell their public that these two Aramaic translations stood in the same relation to the Hebrew text as the familiar Greek versions of Aquila and Theodotion. These relationships serve to characterize the Targum It resembles that of Onkelos but is more free. Especially in the poetic books it commonly avoids difficulties by paraphrase Occasionally a passage like Hosea 1·3 is turned wholly aside from its proper meaning and is devoted to moralizing on Israel's career. Likewise Isaiah 5 1 f is not translated at all, but is interpreted. Ancient geographical names are sometimes changed into those in use in the translator's time; thus Shinar becomes Babel, No (or No-Amon) is changed to Alexandria, etc.

This Targum was first printed at Leiria, Portugal, in A D. 1494, with the Hebrew text and a rabbinical commentary.

Most of the Targums on the Hagiographa are comparatively late in origin. Some of them seem to have arisen even after the need for such paraphrases had ceased, their earliest mention being in the eleventh century. But the tradition of the existence of a Targum of the Book of Job in the first century A.D has already been mentioned, and one on the Psalms also was known then, for Jesus quoted from it as he hung on the cross (Matt 27 46, Mark 15.34). These two books are much alike in their translation But about fifty verses in Job and a lesser number in Psalms have a double translation, and half a dozen of these in Job have actually a third rendering. These additional translations were apparently added by some interpolator in the eighth or ninth century for his language is late and artificial and his style imitative Proverbs stands alone among the Targums, with a strange mixture of Aramaic and Syriac. It is thought to have been made, not entirely from the Hebrew, but in large part from the Syriac version, for about one-third of it is almost identical with the latter.

The Targums on the Megilloth ("Rolls," that is, Song of Songs,

Ruth, Lamentations, Ecclesiastes, and Esther) are, in varying degrees, paraphrases rather than translations. They abound in citations of historical parallels, reasons are given for the occurrence of certain events, words are philologically explained, etc. Ecclesiastes, Esther, and Song of Songs almost touch the limits in paraphrastic freedom. There are indeed two Targums on Esther, consistent with the high popularity of the book among the Jews. Both are highly "midrashic," but more than half of the first of them is taken up with legends about Solomon, the Queen of Sheba, etc. All these Targums were probably the work of different men

Targums on Chronicles were unknown until after the publication of the Polyglot Bibles Two very imperfect texts were discovered and published, one in 1680-83, the other in 1715; they are believed to have originated in the eighth and ninth centuries Of Daniel, Ezra, and Nehemiah no known Targums exist

Much work has been done in investigation of the Targums in recent years, and editions of some of them have been published Paul de Lagarde printed the Reuchlin manuscript of the Targum of the Prophets in 1872, and the following year the Targums of the Hagiographa. In 1884 Abraham Berliner brought out the Targum of Onkelos with notes, in 1899 Moses Ginsburger did the same for the Fragmentary Targum, and in 1903 for Pseudo-Jonathan. Alexander Sperber has been engaged for some years on preparation of an edition of the Targum on the Prophets. He has as yet, however, published only specimens of his work, in 1927 and 1945. With the latter of these he expressed the confident belief "that as soon as the world returns to normalcy again" he would be "in a position to publish the Targum and even on a broader basis than hitherto planned, covering the entire Bible." But for the present, the most convenient source for a complete, if uncritical, text of the Targums still remains the various editions of the "rabbinic" Bible, *Mikra'oth Gedholoth*

The study of these ancient translations yet offers large scope for investigation; in certain cases not even basic questions have been settled. Or to put it the other way, our ignorance of the Targums is still impressive! The homiletic motivation in their creation, the seeming looseness in their methods of translation, and the late date commonly attributed to their origin seem to rob them of much of their value for

text criticism Yet such disparagement can be carried too far. We have already spoken of the long period covered by their evolution, so that their older parts must be conceded a considerable antiquity Further, to dismiss them as loose paraphrases is a course more cavalier than the obvious facts will support. For the worth of Targumic testimony to the Hebrew text is freely recognized in a large number of passages. What is needed is a sound understanding of the methods of these ancient paraphrasing translators and a discerning application of their evidence to our textual problems. But apart from this the Targums merit a wider knowledge than they now enjoy, for they are a rich storehouse of Jewish religious thought and Biblical exegesis through many centuries.

CHAPTER VIII

Other Eastern Versions of the Old Testament

CHRISTIANITY was not limited in its adherents to the peoples who bordered on the Mediterranean seacoast. Many important races whose boundaries lay next the coast peoples' embraced the teachings of this growing, new religion. One result was that soon there came a need for the Bible to be translated into the various native tongues of the believers Local scholars soon arose to perform this important task, so that each people sooner or later possessed a copy of the Bible in its own language Most of these translations were made from the Septuagint, which, we have seen, was the great Bible of the ancient Mediterranean lands. The vigorous activity in our own day of translating the Bible for peoples who have never had it provides a vantage point from which to understand the great importance of all these ancient Bibles for their original readers. Without disparaging this, we use such versions more prosaically for the evidence they offer in textual criticism. With this objective we estimate their worth on the basis of several questions, such as: Who was the translator? How well equipped was he for that great work? From what version of the Bible did he translate? How faithfully has he translated the text before him? Did he use more than one version as the basis of his translation? Did he take undue liberty with the text before him? We can scarcely expect an answer to all these questions, but enough can usually be found to help us estimate, at least approximately, the value that we are to attach to these versions relative to the English Bible of today.

Christianity came early to Egypt. The story of the Ethiopan eunuch (Acts 8 27-39) carries an implication of the spread of the new faith to the lower, not less than the upper, valley of the Nile within the early days of the apostolic preaching. Eusebius indeed reports a belief cur-

rent in his time that St. Mark preached in Alexandria In any case, the geographic proximity of Egypt to Palestine, with intercourse that had continued from remote antiquity, renders it probable almost to the point of certainty that Christian groups were established in Egypt in the first century Yet we lack definite record of this The Book of Acts, except for a very few minor allusions, is concerned with the spread of the church north and west. And authentic sources of the Egyptian church itself take us no farther back than the fourth quarter of the second century, by which time the church in Alexandria was a strong and thriving body, and Christianity had spread into Upper Egypt at least as far as the Fayum

This omission by the official record of the apostolic age is the more astonishing in view of the greatness which the Egyptian church presently attained Ptolemy Philadelphus in the third century B C. "builded better than he knew" when he established the famous library and museum at Alexandria, for by this means he assured an intellectual leadership by the city of Alexandria that was to continue for nearly a thousand years and to provide a broad base for the achievements of the Christian church there. The Christian catechetical school, Clement and Origen, who were successively its leaders, Athanasius, Cyril, Monophysite Christology, the copying of the great Vaticanus and Sinaiticus manuscripts—these are just a few terms of various categories that suggest far-reaching implications as to the vast contribution of the church in Egypt to the history of Christianity

Yet these names imply, and correctly, a sort of foreign intrusion into Egyptian life for which again we must give credit or blame to the dynasty of the Ptolemies; for they were Greek-speaking Macedonians Greek became the language of officialdom and of the intelligentsia in Alexandria And the early Egyptian church was Greek. This is apparent from its use of and critical work upon the Septuagint, from the writings of Clement and of Origen, and perhaps more "romantically" from the Christian papyri unearthed about the beginning of this century at Oxyrhynchus, of which possibly the most famous are the fragments containing the "Sayings of Jesus"

But Christianity did not remain a prerogative of the educated classes. A vigorous native church presently arose; of such simple Christians we have archaeological evidence from the second century. Greek was

their language likewise, but native Egyptians were soon found within the church Especially in the third century the movement spread notably among them. And it was this indigenous Christianity that made one of the distinctive contributions to the character of the whole movement through many centuries That was the practice of asceticism and the development of the monastic life. The geography of Egypt gives a clue to this feature, as to many others in the long history of the country. The proximity everywhere of the desert provided a refuge to which apparently fugitives could flee, and in which Christians, as historic fact, did find sanctuary during some of the severe persecutions that befell the church in the early centuries of its history. The names of Antony in the latter part of the third century, prominently associated with the first impulse to Christian monasticism, and of Pachom a little later, who was the first to organize these solitary ascetics into incipient monastic orders, will suffice for our present purpose. Of these names, Pachom is certainly Egyptian; but of the linguistic composition of these earliest monastic groups we know little It is related, however, that a certain Alexandrian journeyed "up into the Thebaid" to visit Pachom, but since he knew only Greek he found it necessary to learn "the Theban tongue." We hear of the activities of the ascetics, both the solitary and the communal, in reciting Psalms and other religious literature, but to our disappointment nothing is said of the version of the Bible employed It is better than a guess, however, that for a considerable time they used the Septuagint. Yet the pressure for a vernacular rendering of the Scriptures which we have had occasion to remark many times already was felt here also. In particular, the monastic organization of Pachom implies strongly the existence of a native version, for he lays emphasis on Bible reading; yet the location of his group, well to the south in Upper Egypt, renders it highly probable that a considerable number of his monks knew no Greek. And actually there has been preserved a Coptic (i.e., Egyptian) Biblical codex which is dated "not later than the middle of the fourth century A.D.," that is, well within the lifetime of Pachom; and the scope of its contents—Deuteronomy, Jonah, and Acts—indicates clearly that the version was already of some age. Indeed, competent scholars date the translation into Coptic about the middle of the third century, and some would even draw it back into the second.

Coptic was not linguistically uniform. The long, narrow valley of the Nile favored the evolution of dialects, and of these, five have been distinguished; they are Akhmimic, sub-Akhmimic, Sahidic, Fayumic, and Bohairic. The two first are of minor relevance. Of the others, the Biblical remains in Sahidic are the most important, in part because of their bulk but still more because of their greater antiquity and of the study they have received at the hands of modern scholars. The date given above for the Coptic translation refers to the Sahidic. The importance of a vernacular translation at this early date gave prestige to the dialect and favored its spread through the valley. But apparently in reaction against this, other translations, notably Akhmimic, were produced sometime about the fourth century. Their duration, however, must have been brief. It is said that in the fifth century Sahidic had established itself as the literary language throughout Upper Egypt and presumably was making notable headway as the spoken language also. In any case, by the eleventh century, according to the testimony of Athanasius of Kos, the minor dialects had disappeared, for he knows of only Sahidic and Bohairic.

The translation of the Bible into this latter dialect was later than the Sahidic by an undetermined period variously estimated from one to four centuries However, its position as the speech of the Delta, in its western part at least, and the growing importance of the church in Alexandria gave it an immense advantage. But in A D. 641 the Arabs conquered Egypt and thereby sealed the doom of the native dialects Increasingly Arabic became the common language of the land, and Coptic receded slowly but inevitably into the role of a religious tongue. Apparently this process had become complete before the eleventh century, when the patriarch, long since cut off from communion with the church of the west by the Egyptian Monophysite heresy, removed his seat from Alexandria to Cairo. He carried southward with him the translation into Bohairic, which presently became established as the sacred language of the Coptic church and has so continued to the present Indeed it remained a living speech even into the nineteenth century and is understood and slightly used by small groups to the present Sahidic also survived the Arabic conquest for several centuries in the relative seclusion of southern Egypt that offered sanctuary for the Christian church. By a strange caprice of history these groups made

use of the ruins of the ancient Egyptian temples for their Christian worship, and have left their graffitic inscriptions on walls and pillars where centuries before the might and glory of Amon had been piously celebrated. The Coptic church still lives, with significant promise for a land once again experiencing one of the cultural revivals that have marked its long history But Coptic has ceased as a living tongue

Bohairic attracted scholarly attention in the seventeenth century. Walton ignored it in his comprehensive survey of Oriental versions, but Psalm 1 in this dialect was published in 1663 at Leiden The Pentateuch was issued at Oxford in 1731, and the Psalter at Rome in 1744. But the first notice of Sahidic was the publication of a grammar in 1778. Eleven years later a fragment of John's Gospel in middle Egyptian appeared. All these were followed by an interest, and an activity in publication that continue to the present

Sahidic manuscripts in varying degrees of fragmentary condition date all the way from the fourth century to the twelfth or thirteenth. The bulk of them discovered and published in recent years constitute an important contribution to Biblical textual study A remarkable feature of these manuscripts is the accuracy of their preservation. It is pointed out that the remains of Deuteronomy, Jonah, and Acts which we possess from the fourth century are "in precise agreement" with texts of eight centuries later Notwithstanding the relatively large number of known manuscripts, practically all more or less incomplete, however, we do not possess the entire text of the Sahidic Old Testament. Most of the Pentateuch has been preserved, the larger part of Joshua, Judges, and Ruth, the Books of Samuel, fragments of Kings, the greater part of Isaiah, smaller parts of the other prophets, but practically complete texts of Psalms, Proverbs, Job, Ecclesiastes, Esther, and Song of Songs. Only fragments of Lamentations are known, and of Chronicles and Ezra-Nehemiah nothing at all The textual evidence of the Sahidic version is most notable in the Book of Job, where it omits some 376 lines or half-lines now in our Hebrew text, and in Hexaplaric recensions of the Septuagint But the meaning of this situation is not easily discerned Some would say that these passages are thus shown to be late intrusions into the Hebrew; others take the position that the Sahidic has been conformed to Origen's results by omission of material that he marked with an asterisk. The issue is com-

plicated by the features of Hebrew poetry which seem to demand the presence of some at least of these suspected passages in the original poem. Altogether the evidence of the Sahidic has bestowed upon us a first-rate textual problem!

In the Bohairic dialect more complete manuscripts have been preserved. The Pentateuch, the Prophets, Job, the Psalms are practically complete, and fragmentary materials of other books are known. But Biblical texts in the middle Egyptian dialects are very few and in general fragmentary. It has indeed been suggested that a complete Bible never existed; the prevalence of Greek through the region rendered a native Bible unnecessary until after the rise of Monophysite theology in 431 The most important extant materials are of the minor prophets and Proverbs, though some fragments of Exodus also are known

The beginnings of Christianity in Ethiopia—now called Abyssinia—are obscure. For the date of its introduction, the source whence it came, and the identity of its earliest evangelists we are dependent on native traditions These point, on one hand, to the vigorous Christianity of Antioch as the mother church of Ethiopian evangelism, a theory that receives considerable corroboration from certain features of the Ethiopic Bible, on the other hand, the Ethiopic Book of Saints tells of two brothers "from the country of the Greeks" who were taken captive in Ethiopia and remained there for many years preaching and teaching Christianity. When at length they departed, one of them, by name Frumentius, went to Alexandria where he was ordained bishop by Athanasius and sent back to continue his work His memory is piously preserved in the title Abba Salama But in reality there is no contradiction in the two accounts. Earliest knowledge of Christianity may well have come from Syria, but then Frumentius could well have done essentially the work attributed to him, in particular the organization of the Ethiopic church.

It seems clear, however, that a Christian king ruled in Ethiopia in the middle of the fifth century; indeed there is evidence that he became a convert in the course of his reign Soon, if not immediately, Christianity was established as the state religion of the land, and the monarchs made themselves vigorous champions of the faith. Through the centuries prior to the rise of Islam, close relations were established with the church in Egypt and by this means the monastic organiza-

tion of Pachom spread into Ethiopia, as well as considerable Egyptian Christian literature Most important of this, and obviously one of the first books to be introduced, was the Bible. This was apparently the Septuagint version, which in spite of the existence already of some parts of the Sahidic translation was still the Bible of Egypt. Such seems to be the best interpretation of our evidence, confused and contradictory as it sometimes is. Some scholars have advanced the opinion that the translation was made from Origen's Hexapla, some claim a direct dependence on the Hebrew text. But whatever its source, an Ethiopic translation was begun in the latter part of the fifth century, apparently promoted by the zeal of the new royal converts We know nothing of the order and course of the work of translation, but only that it seems to have been completed by A D. 678, the date ascribed to the version of Ecclesiasticus.

The upheaval of the entire Near East resulting from the spread of Islam entailed in Abyssinia a period of confusion and disorder lasting from the seventh to the thirteenth century. Little is known of the history of the land through this time, but a negative result of the chaos is important for the Biblical student. No early manuscripts of the Ethiopic Bible have survived; the oldest known to us are of the latter part of the thirteenth century. Unfortunate as this may well be regarded, the value of the Ethiopic Bible for textual criticism is still further discounted by the fact that a number of revisions were carried through at various times subsequent to the cultural revival of the land about the fourteenth century Naturally the unnamed scholars charged with this task made use of the available foreign versions of the time, notably the Peshitta and the Arabic translation; it is to their credit that they had recourse to the Massoretic text as well But what was commendable for practical religious purposes has become for the critic a serious loss; for the resultant Ethiopic text is scarcely more valuable, as evidence of the Greek text from which the original translation was made in the fifth century A.D., than is Origen's Hexaplaric Septuagint for the Hebrew text of the third century B.C.

The languages of Abyssinia are more confusing than are the Coptic dialects Old Ethiopic is known as Ge'ez. It is the language into which the translation we have been speaking about was made. But by about the tenth century it had become extinct as the medium of common

intercourse; it lived on, even to this day, only as a sacred liturgical language In its place the languages of northern Ethiopia are Tigré and Tigriña. Nonetheless Amharic, from southern Ethiopia, has become the national language. But along with it there are four other southern languages merely to list their names, Harari, Guragué, Argobba, and Gafat The last of these has now also become extinct, but several of the others subdivide into an incredible maze of dialects. Of Guragué it is said there are about twenty! Several of the languages have Biblical translations, of greater or less extent; in Gafat, for example, there is, so far as we know, nothing but a highly corrupt recension of the Song of Songs. Practically all these translations appear to have been made from the old Ethiopic, the most notable exception being the Gafat, which is a translation of the Amharic

The Ethiopic canon differed from the Jewish. It omitted the Books of Ezra and Nehemiah, as well as the two Books of the Maccabees from the Apocrypha. On the other hand it included several apocalypses, some of which find no place even in the more liberal Jewish canon of Alexandria. It is to this fact that we are indebted for the recovery of the Book of Enoch, known for several centuries only in very imperfect Greek and Latin fragments, and the third Book of Baruch which apart from the Ethiopic has not survived at all.

It is estimated that outside of Abyssinia there are today about twelve hundred manuscripts of various parts of the Ethiopic Bible. Most of them are in Europe. The British Museum has a large collection acquired mainly at the time of the Abyssinian war in 1867. They give, however, the text of the late revision mentioned above. A considerable number of manuscripts also are in this country. How many there are in Abyssinia itself no one knows, but it seems probable that the number is large

No complete Ethiopic Bible has ever been printed. The earliest edition of any part was a Psalter printed by Johannes Potkin in Rome in 1513; a second edition followed in 1518 The Psalms were included in the London Polyglot, as also the complete text of the New Testament The first attempt at a critical edition, however, was the publication of the Octateuch by August Dillmann in 1853 and of Samuel and Kings in 1861-71. Another edition of the Octateuch, being the text of the Paris Codex with the variants of five other manuscripts,

was brought out by J. Oscar Boyd in 1909-11. Oscar Löfgren has contributed two carefully collated editions, one of Daniel in 1927, the other of the minor prophets in 1930. S A B. Mercer's critical edition of Ecclesiastes appeared in 1931. The Gafat version of Canticles was published by Wolf Leslau in 1945, but whether it can be regarded as a critical edition, eminent though its scholarship obviously is, remains an open question; for its text is that of a single manuscript —but no other in this language is known to exist!

The Gothic Version. The Goths of Dacia in Europe invaded Cappadocia in the third century. Among the captives carried away were some Christians. Ulfilas was born in Dacia, of captive Christian parents, about A.D. 310 His sturdy, aggressive Christian character pushed him to the front, so that about 340 he was consecrated bishop either at Constantinople or at Antioch. After maintaining his bishopric in Dacia for seven years he was driven to Moesia, which was the region now included in Bulgaria and part of Yugoslavia In this country Ulfilas translated the Bible into the language of the Goths, the captors of his parents He is said to have invented the alphabet in which to write his translation, and thus the version takes on additional importance as the first written literature of the Goths. Indeed, it is "by several centuries the oldest specimen of Teutonic speech." Ulfilas' work was certainly done about the middle of the fourth century, for he died by 383.

A contemporary, Philostorgius, states that Ulfilas translated "all the books of the Scripture with the exception of the books of the Kings, which he omitted because they are a mere narrative of military exploits, and the Gothic tribes were especially fond of war." Only fragments of the Old Testament remain among the dozen or so known manuscripts of the Gothic version These fragments include parts of Genesis 5, Psalm 52, and Nehemiah 5-7.

A study of the version shows that it is most closely related to the Lucian text of the Greek. This is as we would expect, since that recension of the Greek was current in Asia Minor during the century of Ulfilas' activity

The Georgian Version, like the Gothic version, arose in the fifth or sixth century on the outskirts of Christianity. Armenian tradition ascribes it to the work of Mesrop, who is said to have invented the

Georgian alphabet. In the monastery at Mount Sinai there is a papyrus Psalter of this version from the seventh or eighth century, and a copy of the Gospels and a Psalter dated in the ninth century. A manuscript of the whole Bible, with some omissions in the Pentateuch, is now preserved in two volumes in the Iberian monastery on Mount Athos. Also a manuscript of the prophets at Jerusalem is ascribed to the eleventh century The best printed edition seems to have been that issued at Moscow in 1743, in which, however, certain gaps in the Georgian original were filled by translation from the Slavonic Bible. Comparison of the different manuscripts shows that there have been frequent revisions and additions This version, like the preceding, was doubtless made from the Greek, with possibly some influences from the Syriac. However, the lack of a critical edition prevents final decision upon such questions.

The Slavonic version was the Bible of one of the great races contiguous to the centers of Christianity in the early centuries Its origin is not traced back of the ninth century. The work is attributed to two brothers, Cyril and Methodius, sons of a Greek nobleman, whose relations to Slavonic neighbors gave them a knowledge of that tongue Their first efforts are thought to have been bent toward translating such parts of the Bible into the tongue of the Bulgarian Slavs as would be of most use in church services. Later, the whole Bible was so rendered. Some Slavic scholars maintain that the original Slavonic translation was in a dialect closely similar to the old Bulgarian.

Some of the manuscripts of this version date from the tenth or eleventh century. But the oldest manuscript of the whole Bible is very late, 1499, and is now at Moscow, known as the Codex Gennadius Of the Old Testament manuscripts, the oldest are of the Psalter, reaching back to the eleventh or twelfth century. Special studies of several Old Testament books have been published in recent years; the interest being shown by native Slavic scholars is particularly encouraging. It seems probable that many important manuscripts still await publication and study

The value of this version differs in different books of the Old Testament. The Pentateuch (the Law), the "Prophets" of the Jewish canonical division, the Psalter, Job, Ecclesiastes, Wisdom of Sirach, and Song of Songs were translated from the Greek by different

persons. The Book of Esther was translated from Hebrew, Chronicles, Ezra, Nehemiah, and some others were translated from the Vulgate, just before the date of the Gennadius Codex of 1499 When critically edited, the version will thus provide a measure of textual evidence upon all three of these ancient Bibles.

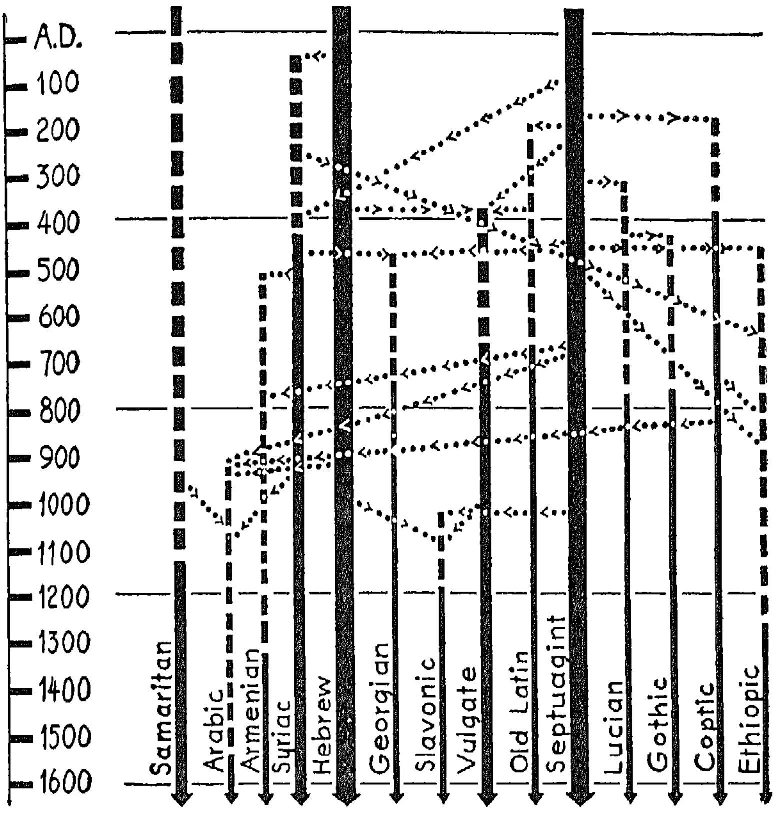


DIAGRAM SHOWING SOURCES IN GENERAL OF THE MINOR EASTERN VERSIONS

The Armenian version was made for the Christian communities of eastern Asia Minor An Armenian church is mentioned in the third century; apparently it was founded by Syrian Christians. The Armenian Bible seems to have been translated from the Septuagint somewhere about A.D. 400, but later revisers made use of the Syriac and perhaps the

Hebrew. It is noticeable that the chapters and verses of Jeremiah are arranged, not as in the Septuagint, but as in the Syriac and Hebrew. Where the Syriac and Hebrew differ, it usually follows the Hebrew. Such composite character of the Armenian version is thought to be due to the use of Origen's Hexaplar text, whose symbols now and then seem to find place in Armenian manuscripts.

It is claimed that this version is one of the most beautiful and accurate of all the versions. Its language is so closely allied, in grammar, syntax, and idioms, to the Greek that its renderings very faithfully transmit the meaning of the original text

The Armenian Bible contains the books of the Septuagint in the same order up to I and II Esdras (where the latter is Ezra in the Greek); then Nehemiah (called III Esdras in the margin), Esther, Judith, Tobit, I, II and III Maccabees, Psalms, Proverbs, Ecclesiastes, Song of Songs, Wisdom of Solomon, Job, Isaiah, the twelve Prophets, Jeremiah, Baruch, Lamentations, Death of Jeremiah, Daniel, Ezekiel, and Death of Ezekiel. The following additional apocryphal books are found in the manuscripts. the Testament of the Twelve Patriarchs, the History of Joseph and his wife Asenath, and the Hymn of Asenath. These latter are not found in the printed editions of the Armenian Bible, nor are they in all manuscripts. There are also some further irregularities in the arrangement of these various books. Each Old Testament book has a preface containing an introduction and summary of contents. In addition to the usual preface some manuscripts have a special introduction, as a passage from David the Philosopher, from Athanasius, from Epiphanius of Cyprus. Daniel is a translation of Theodotion's version as found in the Septuagint

Printed editions of the Armenian Bible appeared first at Amsterdam in 1666; in Venice in 1733. The first critical edition appeared in Venice in 1805, edited by Zohrab, on the basis of a collation of several manuscripts. A later edition appeared in Venice in 1860

The great Arabic conquests of the seventh and eighth centuries A D entailed ultimately an Arabic Bible also For while great numbers of the population bowed to the logic of events and became Moslems, the Jews remained faithful to their traditions, and the Christian churches lived on, though greatly depleted in numbers. In course of time the Arabic language established itself as the sacred tongue in a great belt

of territory from the Atlantic eastward as far as India and the Malay archipelago; in varying dialects it became, and continues to this day, the vernacular speech of much of North Africa, of Egypt, Palestine, and Syria, and of Mesopotamia. In these latter lands the need of an Arabic Bible came to be felt. To some extent it may have been felt even before the triumphs of Islam, for there were Jews and Christians in Arabia before the time of Mohammed. Nevertheless, it was in the lands to which the language spread that the impulse toward an Arabic translation presently found expression Indeed, the vitality of the impulse is evidenced by the diversity of such translations as came into existence An Arabic translation from the Coptic version of the Septuagint is extant, and there are several manuscripts of an Arabic translation of the Samaritan Pentateuch. However, the Arabic Bible proper began in the tenth century. The Pentateuch was translated by Saadya, the Gaon, who was born in the Fayum in Upper Egypt in A D 892 but early removed to Babylonia, where he became head of one of the great Jewish schools and the most famous Jew of his time His death occurred in A D. 942 His translation was made, obviously, from the Hebrew, as was the Book of Joshua likewise. But Judges, Samuel, Kings, Chronicles, and Job were rendered from the Peshitta, and the prophets, Psalms, and Proverbs from the Septuagint. It was this strange mixture that was found by the editors of the Polyglots in an Egyptian manuscript of the sixteenth century and employed by them for their edition.

It will be recognized then that the Arabic version possesses little value for the textual critic Even the translations direct from the Hebrew were made in a period long subsequent to the official fixing of the text, and indeed are almost contemporary with our great early Hebrew manuscripts. Still less do the Arabic Bibles current in recent times concern the critic They possess many excellent qualities, their wide use throughout the lands of the Near East makes them cultural documents of high importance, but they fall completely within the class of modern Bible translations, of which the Bible societies now report a total well over a thousand. A translation from the Vulgate, made by Sarkis er Rizzi, Maronite Bishop of Damascus in 1620 and first published in 1671 in Rome, enjoyed a considerable popularity when it was adopted by the British and Foreign Bible Society and

used by the first Protestant missionaries to Syria. Yet its defects became so apparent that in 1848 a new translation, direct from the Hebrew and Greek, was undertaken jointly by the American Mission in Syria and the American Bible Society. On August 22, 1864, the translation was finished, and on March 10 in the following year it was issued from the press. The Jesuit fathers in Beirut also realized the necessity of a modern translation, and on November 12, 1876, the first part of their Arabic Bible was authorized, to be followed shortly by the two remaining parts. A remarkable feature is that this, like the translation by the Protestant missionaries, was made direct from the Hebrew and Greek, although the editors claim that the Vulgate, as the authorized version, was carefully compared. Both translations also employed native Arabic scholars especially for guidance in Arabic idiom; and both, it is relevant to comment, in their published editions manifest beautiful typography These are the Arabic Bibles of today.

CHAPTER IX

The Versions and the Practice of Textual Criticism

THE versions surveyed in the preceding chapters are obviously only a selection from the mass of Bible translations which have steadily grown in number, most notably within our own times Two principles have dictated the selection. They have all been treated as "ancient" versions, although the distinction wears thin at the point of the Slavonic translation, for, as will become apparent later in this study, it was actually subsequent to the beginnings of the English versions. But further, these versions are all of greater or less importance as resource material for dealing with problems of the accuracy of the text of the Old Testament, in more technical language, for textual criticism. Another determining interest has been the ancestry of our English Bible, directly or indirectly these ancient translations contributed to the great stream of Bible transmission which in the course of the centuries gave us our several English versions.

The wide variety of temporal and geographic distribution of the ancient versions is an impressive feature of their story. They were produced, too, by many sorts of men in differing circumstances Some were scholars of the first rank with a fine sense of the true nature of translation; others employed methods that can better be described as popular, but all alike were devout, and concerned to serve the religious needs of their people Some translations were excellent; some rendered well the meaning of the original but through their freedom lost considerable of its literary flavor; others were slavishly literal to the point of obscurity; and yet others incorporated greater or less interpretative material. But whatever their merits and differences the versions as a whole are intensely interesting as religious documents With them we follow the spread, first of Judaism, and then of Christianity through

the ancient world; we look into small communities in the midst of an all-embracing paganism but bound together by a glimpse of unseen realities that lifted them out of the sordidness or actual misery of their common circumstances, and transformed all with the glory that they read in the pages of their supremely great Book. Sacred Scripture it was for them: holy writing; and only that faith and the reality on which it was and is based—let our critical views be what they may—can explain the amazing story of the spread and transmission of the Bible and the power it has been in the shaping of civilization.

Yet however attractive this aspect of our story may be, we must here deny ourselves more than an occasional reference to the deepest facts of the Bible and confine attention to narrower matters. For scholarly work, the versions have the specialized value already assumed in much of our discussion they are priceless evidence upon the history of the Biblical text. In the long course of transmission errors of copying did as a matter of fact enter by various means into the tradition. These ancient translations enable us to cut back progressively behind the point where one after another of these foreign intrusions came into the text. For this purpose their testimony is of diverse relevance. Some are translations of previous translations, hence are a second step away from the original; several have been revised under the influence of other translations, and all without exception have themselves suffered through an extended process of transmission similar to that which created the problem in the original text. To seek to discover that original under such a mass of complicating and obscuring late recensions may well seem no more than an effort to correct one inaccurate tradition by means of others even more unreliable. And indeed there would seem to be much truth in such disparagement of the work of the text critic, even though touched with cynicism. For the restoration of the original text is an extremely difficult undertaking, such as commonly to defy success; in general one's best results are little better than a reasonable probability. However, one must guard against the easy assumption that the later increments which the critic seeks to identify are devoid of value. Sometimes, it is true, they are nothing but rather meaningless confusions of the original words, the advantage of correcting these is apparent But a large bulk of "corruption" consists of intruded words or phrases or even considerable sections that

are of the nature of commentary or expansion. Only an arbitrary conception of the process of revelation can deny to the devout men who wrote these words out of the reality of their own religious experience a share in the divine guidance which created the greatness of the best of the Biblical writers. Nonetheless, it is clear gain for us to be able to distinguish the words of the latter, as of the commentators also, and to understand somewhat accurately just what each said for the troubled needs of his own time.

Here then is the significance of textual criticism in the total of Bible study, and here the importance of the versions as the critic's prime resource, for we have seen that all our Hebrew manuscripts are too late to provide testimony upon the most acute problems of the corrupted text There is, however, another bulk of important relevant material, to which no more attention has been given hitherto than a few allusions. It is the so-called "patristic quotations," although the term must be somewhat enlarged, as we shall see in just a moment. The leading figures in the church of early centuries, the "fathers," they are called, when writing on religious matters naturally quoted from the Bible of their time and region The "fathers" of Africa near ancient Carthage quoted from the Old Latin Bible, those in the east used one or another of the Greek Bibles or of the local translations that arose in the course of time: Coptic, Ethiopic, Armenian, Syriac, etc. But a similar practice was followed by Jewish Biblical scholars. The *Midrashim*, for example, are full of Biblical quotations, indeed it will be recognized that the immense bulk of famous Jewish writing of those early centuries, Midrash, Mishnah, Talmud, was Biblically based and made large use of direct quotations So to the Christian "fathers" we must add the great Jewish scholars of early times, as a source of evidence upon the Biblical text It is obvious that such evidence is fragmentary; it is seldom if ever that a complete text of a Biblical book can be recovered from any one of these sources. Still the bulk of such quotations is impressive The nature of the quotations raises problems. Did the "fathers" check their references in the interest of accuracy? Or did they quote freely from memory? There is good reason to suspect that often they followed the latter course, in which case their evidence must be correspondingly discounted. Further,

the patristic quotations, as distinct from those by the Jewish scholars, are always from one of the versions, not infrequently a secondary one, hence are one or two steps away from the original Yet all of their evidence is important and may not be neglected in the total of the critic's source material The variety and relationships of these several strands of available material are graphically presented in the accompanying chart. It has the disadvantage of implying a greater precision in regard to dates than is possible, also the temporal spread of the patristic and similar Jewish materials does not lend itself to the scheme of the chart, and so only an approximate date for their beginnings is indicated. With these warnings the reader may find the diagram of help

There are just two methods of textual criticism, for lack of better terms we may call them the objective and the conjectural methods. The latter is also called the rational; in any case it is not to be equated with guessing By the former is meant the use of objective evidence such as manuscripts, versions, quotations, and even evidence preserved within the Old Testament itself, the most notable of which consists of double recensions of passages, for example II Samuel 22 and Psalm 18, Isaiah 2 2-4 and Micah 4·1-3, etc The conjectural method is invoked when the critic employs other lines of evidence. grammatical considerations, poetic structure, the logic of the context, circumstances of the ancient writer's time, and the like, and finally his own best judgment in assessing the total diverse mass of testimony and deciding on a reconstructed text It has been commonly held that the prevalent method of Old Testament text critics is that of conjecture, while in the New Testament, thanks to the wealth of manuscript evidence available, only he objective method is employed But this is quite erroneous Doubtless many readers will raise an incredulous eyebrow when told that both alike depend upon both methods; the ultimate recourse of the New Testament critic, not less than of the Old, is what we have just now called the conjectural method It is apparent that the very wealth of the New Testament critic's objective resources compels him to differentiate and evaluate their conflicting testimony; in the end his decision rests, not on an irreproachable authority, but on his own best judgment as to what all the evidence really means in

terms of an original text At this point he is on common ground with his Old Testament colleague! The difference between them is not in method, but in relative bulks of available objective resources. The New Testament critic is compelled to perform an immense labor of classifying and sifting of materials before he comes to his real task of con-

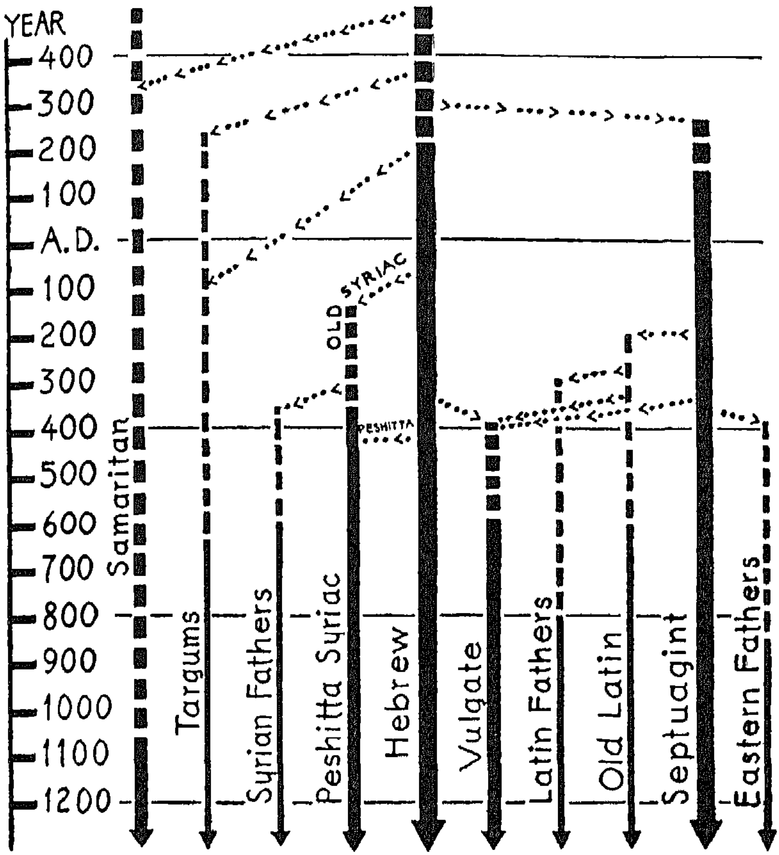


DIAGRAM SHOWING GENERAL RELATION OF THE ANCIENT VERSIONS TO HEBREW

jectural criticism In the Old Testament, the critic feels beggared, by comparison, and would gladly give a prince's reward for a tithe of his colleague's resources But by a shorter path he comes presently to precisely the point where New Testament text criticism must also say

its final word· he must exercise his best judgment upon his available evidence.

The first matter to be considered in a study of the text is its authenticity: Is, or is not, our present reading of a given passage identical with what the original author first wrote? It is a question partaking of all the complexity and uncertainty inherent in the entire procedure of text criticism. The resources just now mentioned are those to be invoked at this point also. Corruption is indicated by variants in manuscript, versional, or "patristic" sources, also by linguistic aberration or perhaps abnormality, by logical or chronological disconnection, by anachronism, by irregularity in literary structure, or by any other suspicious feature. He is a bold critic, however, who would claim that corruption is established by the presence of any or all of these marks, though obviously its probability rises with their increase. We have come to a chastened mood in this matter—we have been chastened by our mistakes! Readings which formerly were accepted as certainly wrong have in some cases been shown by the advance of knowledge to be quite correct; the error was ours who boldly charged textual corruption Yet on the other hand the situation affirmed already must also be borne in mind The Hebrew text of the Old Testament has beyond a doubt suffered corruption in the course of the centuries. Gradually we have been forced to an increasing respect for the care and success with which it has been preserved, but we must not run into an excess in the conservative direction as mistaken as that from which we have escaped Even though the text merits profound respect, it contains, nonetheless, great numbers of corruptions of varying bulk and significance

A ready illustration of our former errors is provided by I Samuel 13 21 The context relates the repression of the Israelites by the Philistines, who permitted no metalworking but required agricultural implements to be brought down to Philistine craftsmen for sharpening. One of our standard commentaries published at the turn of the century says, "The verse is admitted to be hopelessly corrupt" We may not deny that it contains difficulties, but of one disputed word there is now no question; that is the Hebrew word *pim*. The standard translations depend on the Targum in rendering it "file." The Authorized Version adds a note "a file with mouths"—whatever that can mean!

The note in the American Standard suggests the meaning "edges," which likewise presumes, apparently, that *pim* is the plural of *peh*, mouth. However, in recent years there have come to light nearly a dozen stone weights inscribed with this word *pim*. As a measure of weight, it served in early times also as a denomination of what we may loosely call money. This verse 21 tells in authentic Hebrew of the charge made by the Philistine metalworkers for sharpening the Hebrews' plowshares and mattocks. The fact that the text was accurately preserved for many centuries even after its meaning had been lost has salutary implications for the text critic, only second in importance to the sobering effects of a consciousness of his former error.

When the critic has satisfied himself that error has crept into his text, then his use of the versions toward a recovery of the original falls neatly into three definite steps

First, he must come as close as is now possible to determining the original readings of the several versions in the passage being examined. The immensity and complexity of this task has already been indicated, particularly in regard to the greater versions It has been pointed out how certain scholars have devoted their main energies through a working lifetime to the recovery of the original Septuagint, and in the end have attained only incomplete results. The work of Professor Max Margolis provides a sobering illustration The excellence of his methods and results all workers in the field recognize He worked with painstaking care for many years and completed less than the entire book of Joshua. Great progress has been made on the Septuagint, but no one would for a moment claim that we have reached even approximate finality And in regard to the other versions the situation is far worse. Little more than a good beginning has been made.

The task confronting the critic is that of assembling and classifying the total evidence that we possess in the primary versions—that is, those that were translated direct from the Hebrew—and in those that provide reason for believing they were revised by comparison with the Hebrew and thus may contain testimony as to its readings; this evidence the critic will assemble for each version from manuscripts, patristic quotations, and secondary translations where they exist Then he must evaluate the evidence in the light of the character and history of the source employed, and finally apply it to the delicate procedure

of deciding what the version originally read. When it is realized that this must be done for all the versions, even for the secondary ones, before their testimony can be employed in appraising the text of their parent versions, it becomes apparent that the undertaking is quite beyond the abilities of any single critic, however able and learned. Yet without finality in this first step text criticism cannot be certain. And indeed that is just where we are and must remain for an indeterminate period while special studies push forward our knowledge of the several versions. What the critic does, and can only do, is to employ the best available information as to the correct reading of each of the versions —he will secure this from the most reliable manuscripts or from the work of dependable specialists—and then proceed to a conclusion which, if he is a competent scholar, he will recognize fully to be no more than approximately correct.

Having arrived at this point, the second step in the critic's use of each of the versions is to determine what Hebrew reading lay back of the translation. If we may employ a word that has come into general technical use at this point, the critic must decide what was the *Vorlage* of the version.

Now it may well appear that the answer here is tiresomely simple All that is needed is enough knowledge of ancient Hebrew to retranslate the version, and presto, there it is! Comparison with the Massoretic text will then show the corruptions that have entered the tradition But this is precisely what no competent critic will do A complex bulk of relevant considerations must first be weighed. The critic must bear steadily in mind that interesting and important as are the version's renderings intrinsically and historically, he is concerned not with the ideas which the ancient translators drew from the text but only with the evidence they provide as to what the Hebrew was in their time With this consideration many alleged variants will wither and disappear Others will follow them when a little thought is given to the form of the Hebrew text in ancient times It has already been pointed out that the practice of marking word separations fell into disuse somewhere in later pre-Christian centuries; the resultant uncertainty as to both words and sentences has often occasioned translations that seem remote but actually attest our present Massoretic text. The same conclusion relates to the insertion of vowel letters into

the text sometime subsequent to certain of the versions; once again seemingly strange translation actually arose from the consonants of our text

But further, a familiarity with the principles and problems of the art of translation is highly relevant No one is competent to undertake the full task of criticism of the Biblical text until he has himself wrestled with the perplexing difficulties entailed in rendering it into a version acceptable for general religious use. The differences of structure and of modes of thought in any two languages, more especially in those so distinct as Hebrew and the European languages, not infrequently are such that true translation is impossible. And through considerable areas of less acute issues the rendering will of necessity lie a greater or less distance in the direction of paraphrase The grotesque result that would be attained if one were to retranslate selected passages of one of our modern Biblical versions as evidence of the Hebrew text from which it was derived should prove a sobering consideration for the too literal critic To make a proper use of the ancient versions, then, one must be familiar with the ancient practice of translation, and in particular with the characteristics of the individual translator of the passage under study. Translators differ as much as original authors; they have their favorite words and phrases and grammatical and logical constructions. In this fact lies the importance of the work that has been done toward identifying the several ancient workers who reveal themselves in certain of the versions, notably the Septuagint, it will not suffice to cite Septuagintal usage in general, the decisive matter is rather the tricks and habits and modes of the individual translator Thus the Hatch and Redpath *Concordance to the Septuagint* becomes indispensable equipment to the text critic; unfortunately there is no Hatch and Redpath for the other versions. Translators differ widely in their freedom. We have already commented on the extreme literalism of Aquila's Greek version and, though less marked, of the Syro-Hexaplar; in the other direction one thinks of the freedom of Jerome's Vulgate and, still farther out, of the homiletical renderings of certain of the Targums The effort to make a passage meaningful for the local group concerned sometimes dictated renderings that diverged from the literal words of the original. A modern version for equatorial Africa translates the phrase "whiter

than snow" by the words "whiter than wool." A study of the Greek of the Book of Isaiah has revealed in it a comparable intrusion of local coloring.

The critic may well adopt, if not a rule, at least a feeling of "economy of variants" as he finds one after another alleged variant dissipating under considerations such as are here suggested. However, he will eventually arrive at renderings which defy explanation on grounds other than that the *Vorlage* of the version differed at this point from our present text. Here he comes to the third step in his use of the versions for recovery of the original Hebrew: What is the significance of this *Vorlage* in the history of the text? Even yet the problem is not a simple one of alternatives. the Massoretic text *or* the version's reading, it is rather to assess the process by which these two readings arose At some point in the long history of the Hebrew text there was only one reading of this passage How then did it separate into the two represented in the variant now present? Here again the Hatch and Redpath concordance will be of great assistance, for its listing of all the Hebrew words translated by any one Greek word will frequently indicate the probable original. It will sometimes reveal also the course of corruption But in any case, the critic's next step is to evaluate the two readings in the light of their origins.

This is the final point to which the versions can carry the critic in his effort to recover the original text Somewhere along his advance he must, however, exploit also the resources provided by conflations within the Hebrew text, in particular by certain phrases which are commonly recognized to be corrupt and confused Careful examination will sometimes reveal that the scribe was himself uncertain; either he had two different readings between which he could not decide, or else his exemplar was in such condition that its reading was ambiguous. In either case he took the safe course of giving both readings—and there they are to this day, a confusion and perplexity to the reader An illustration is found in Nahum 1 10, which seems to say something about entangled like thorns and drunken with liquor. two ideas that do not easily lie together. But the second phrase is, in the Hebrew, obviously a corrupt duplicate of the first, the scribe has included both! Recognition of such "corrupt conflations" will go far toward elucidating many difficult passages.

Much more important for the critic, however, are the duplicate passages to which brief reference was made above. But their number must not be limited to the well-known duplications entailing several verses or even a whole chapter or poem. Account is to be taken also of brief portions, not more than a verse, or a phrase, or even a single word, that are repeated in a context which renders them significant as evidence upon the primary reading The Old Testament, in its several parts, bears many marks of its devout use as sacred literature. Some of these are spoken of as pious glosses, others are comprehended under the blanket term "editorial additions." But it is revealing to see both as deposits rather of a process of commentary upon the Scriptures, a process that expressed itself in one direction in the free translations of the Targums and in another in the immense Midrashic literature. In this latter the common form of treatment is, first, the quotation of a Biblical verse or phrase, followed then immediately by commentary, or sometimes by variant comments Precisely this sort of pious commentary is found in considerable bulk within the Old Testament, notably in the Book of Ezekiel, but also though less frequently in other prophetic books, and with comparative rarity elsewhere. The comments are of high value as deposits of Jewish religious thought, but the quotations are the important matters for the text critic In them he possesses direct textual evidence, which though fragmentary yet antedates all other objective evidence by an unknown period, certainly in many cases by several centuries It will be apparent that this type of evidence requires the same cautious evaluation as was just now demanded for the handling of the approximate *Vorlage* of the versions. But in any case, arrived here, the critic has completed the "objective" side of his task and is ready to undertake the much more delicate procedure of "conjectural" criticism

It is notable how few rules exist for his guidance "In general the older reading is superior"; "In general a consensus of readings, or a majority, is to be preferred"—rules that concern the objective side of criticism and in Old Testament frequently beg the real question More relevant are the observations that "The shorter reading is preferable," and "The more difficult reading is preferable." Yet it is obvious that these can be no more than suggestions for cautious consideration, for applied rigidly both lead to absurdity. The latter, for example, would

mean that the Old Testament originally was nonsensical, or else written in cryptic terms such as to reduce it to near-nonsense. As guides, not as rules, however, the two suggestions are valuable. Slightly better is the observation that the reading is preferable which lends itself to simplest explanation. But the total of all rules will not take one far. Soon the critic is cast loose to make shift for himself, depending only on his own abilities. Far better than any formulation of methods is a wide scholarly facility in the languages concerned and in the history of the transmission of the Bible. Added to this one should possess a broad understanding to apply to the ways of scribes and translators, and best of all a fund of common sense that expresses itself in good judgment. Lacking these, the would-be critic should find some other field for the exercise of his talents: perhaps modern fiction!

It has been said that the final resource in textual criticism must be paleographic and contextual If the terms are defined generously, they will serve. Certainly a knowledge of the history of the alphabets concerned, more particularly of the Hebrew, is indispensable The similarities of letters in the successive stages of evolution of the alphabet occasioned an age-long course of corruption Some of these similarities were mentioned earlier in the present study. The confusion of the Hebrew letters corresponding to *d* and *r* was so common that the critic now is seldom moved to remark it. In this case the resemblances persisted through the several forms of the alphabet, but in general each stage of development entailed new similarities and the sloughing off of the old. It results that the range of possible confusion covers the entire alphabet. Thus it assumes considerable importance for the critic to know when any one book of the Old Testament came to be written in "Aramaic cursive," and when the fully developed "squared characters" were first employed But our study of the history of the Hebrew text will have shown that on this matter our information is still very vague The variants of the Septuagintal translation shed some light, some of them can be best explained as a confusion of the older letters But unfortunately the total meaning is blurred, for some variants presuppose the squared alphabet One gains the impression that the process of change was erratic, with much depending upon the preference of the individual scribe and on the book he chanced to be

transcribing Apparently there was a considerable period when manuscripts existed side by side in the two alphabets and were employed indiscriminately as exemplars by scribes and perhaps even by translators However, concern with this special problem must not obscure the importance of paleography for a wide range of the text critic's work Even in his conjectural emendation he will be obliged to take account of the alphabetic possibilities and probabilities of the reading which he is considering

But it will be apparent that paleography can do no more than uncover the source of variant readings; it fails completely to reveal which of the two was original. In a given passage, for example, was the Septuagint *Vorlage* right in reading *d* where the Massoretic text has *r*? Or was the situation the reverse? In many cases the critic will perhaps reply that the answer is obvious. But in that very act he reveals his process of reasoning and demonstrates the close interrelation of paleographic and contextual considerations. An obvious superiority within the variants of a paleographic confusion arises only through a preponderant support of contextual considerations; one reading fits the context so much better than the other that decision between them is spontaneous and immediate Indeed this situation is typical of the intimate interrelation of the two types of evidence, so that the critic employs both alike with little realization of his turning from one to the other

The evidence of context is of various sorts Simplest to apply is that of consistency with grammatical and syntactical usage. Then follow in uncertain order the author's preferences in vocabulary, his style, his thought, chronological and historical relevance, and a number of other matters that may be loosely described as logical consistency. It is reasonable to suppose that the writer made a statement which was rationally coherent and in some immediate way relevant to the context of his thought. Yet the critic must always be on guard against his own propensity to regard as logically dictated what he wants the passage to say, the course of text criticism has too often been distorted into one of rewriting the Bible in accordance with the critic's theories. The use of context as a critical resource is merely the complement of the process mentioned above as establishing the probability of corruption; briefly, to reverse the suspicious features there listed, and seek a

reading which eliminates them. An emendation which notably elucidates a passage, removing its difficulties, and at the same time harmonizes with the author's usage and the immediate context of thought, has a probability of worth. But until it is corroborated by other lines of evidence it must remain no more than a clever guess.

The forms of Hebrew poetry happily provide textual evidence beyond that available in prose passages. First to consider is parallelism; it is apparent that the more usual expression of this device offers cogent indication of the content of corresponding part lines. Nevertheless, the feature partakes of the uncertainty inherent in all use of poetic criteria. For the Hebrew poets exercised considerable freedom and a sense of the artistry of variety. Even in parallelism the exceptional is by no means conclusive evidence of textual corruption. The structure of the line also demands attention from the critic. Most Hebrew poetry is in lines of two members—distich lines they are called, in the somewhat absurd way in which we invoke Greek terms for characteristically Hebraic features. But genuine tristich lines are not uncommon; further, they are often intruded into a poem which is mainly in distichs. Their presence creates a critical problem. Do they obviously declare the presence of foreign matter? Sometimes apparently so. It seems highly probable that sporadic lines of unusual form have suffered corruption. On the other hand, if tristichs occur together in unified groups of two or three, although their context is otherwise distich, their originality remains a reasonable possibility which must be tested by other considerations from the critic's repertoire.

The meter of these stichs, as the units of the Hebrew line are called, also provides an index of authenticity or corruption. Approached from traditional concepts of the scansion of English poetry, meter would appear to supply almost conclusive evidence of intrusion or omission. But it is well known that Hebrew meter is quite different, depending not upon the regular succession of a fixed number of stressed and unstressed syllables but upon a somewhat uniform pattern of major vocal stresses. The most common measure is that of three heavy beats in each stich, conventionally indicated as 3·3, or in case the line is a tristich, then 3 3·3. Yet, owing to the nature of Hebrew scansion, or else to our ignorance of its precise rules, it often occurs that one cannot be certain whether or not the presence (or absence) of a certain word

actually disrupts the structure Certainty is further discounted by the now well-recognized fact that for stylistic effects Hebrew poets not uncommonly altered their measure within a single poem. In a composition prevailingly of 3 3 scansion, lines of 3.2 and 2·3 are often interspersed under circumstances that give no sound basis for postulating corruption.

A passage which has received considerable attention in this regard will serve as an illustration. The first line of Isaiah 45·1 says:

> Thus says the Lord to his anointed,
> to Cyrus, whom I have grasped by his right hand

The claim has been put forward that the word translated "to Cyrus" is excessive in the meter, hence is to be treated as a later intrusion. Now, what decision can we reach? The prevailing measure of the poem appears to be 3 3, though frequently altered to 3 2. This first line, however, contains eight words, neatly distributed four in each stich One of these in the first stich is only a monosyllable, and one in the second is of a syllable and a half—to pass lightly over a Hebrew technicality. Both are connected with their immediately following word with a mark which we may call a hyphen, indicating, it would seem, that the Massoretes intended the combined words to be pronounced in each case as one By this means the line falls into the 3:3 pattern. It appears then that the meter, instead of revealing corruption, actually supports the text However, the combined unit in the second stich is heavy; it has four full and two half vowels, whereas the corresponding unit in the first stich has only three full vowels. Possibly the Massoretes were wrong; perhaps this combination in the second stich should be broken up into its constituent words and each of these given a metrical beat In that case "to Cyrus" would clearly overload the stich and its spuriousness would be rendered highly probable. But even if the Massoretes were right, it remains entirely possible that this line was originally of 3:2 meter, as are the first lines of verses 2, 3, and 4 (to go no farther) Then once again "to Cyrus" would be excessive And so what can we conclude? Only that argument from meter alone is highly tenuous, until other corroborative evidence can be adduced there is no sound basis for tampering with the traditional text.

Poetic structure offers yet one further criterion for the text critic. After more than a century of discussion it is now becoming clear that the Hebrew poets commonly grouped their lines in simple combinations which we would call verses, if that word had not already been pre-empted in Biblical usage, but for which the Greek term "strophe" has come to be generally adopted, notwithstanding its entirely false implications. These Hebrew strophes were groupings of two or three lines in a somewhat distinct unit of thought. In long poems a further organization can sometimes be detected, with strophes arranging themselves in larger groupings to which the name "stanza" has been applied These consist generally of two or three strophes Integral to all this structure is its regularity. Unless some established scheme of groupings of lines in thought units manifests itself in a poem, then it is a fallacy to speak of the presence of strophes or stanzas. Yet this is not to say that here at last the Hebrew poets arrived at an inflexible regularity. Neither can we say that they did not! We have not reached finality in this, more than in any other, aspect of our understanding of Hebrew poetic structure. It is deserving of note that certain longer Biblical poems, while manifesting a remarkable regularity in strophic structure, yet have occasionally an excessive line. Whether this is then to be declared spurious or whether it is but one more manifestation of the stylistic freedom of the Hebrew poets we simply do not know.

In the end, then, the work of the text critic may well seem to the non-professional observer just so much clever guessing. Yet fairness demands the confession that the survey now concluded has been deliberately and designedly conservative It is well for all concerned to realize that critical results are devoid of the certainty commonly ascribed to those of the worker in the natural sciences Text criticism is a department of text history; and all historical investigation is conditioned by the indeterminate character of human mental processes. The unpredictability of human volition and conduct in the original historic act or source, along with the limitations of the investigator's own thought and judgment such as to preclude better than an approximate precision, together combine to reduce the certainty of his conclusions Added to this, in the case of the textual critic, is the fact that for many if not for most of his problems he is woefully poor in cogent evidence so that he must make the most of such mere

traces as he can discover. It is then obvious that his results never are proven conclusions, but merely greater or less probabilities. Yet when it is recalled that this same human unpredictability and inaccuracy conditions all thought and knowledge, so that nothing can be considered proved, unless perhaps Descartes's famous axiom, the work of the textual critic is set in its proper perspective and seen to be much less erratic than the cynic may charge. Guessing—in more respectable terminology, conjecture!—has a rightful and valuable place in his work, as indeed we are told that it has even in mathematics. Yet this work is much more than conjecture. No reputable critic will fail to distinguish clearly, both in his own processes of thinking and in the results which he presents, between guesswork and demonstrated conclusions. He will be at pains also to confess when his evidence is inadequate for the conclusions he advocates, even though such as is available may all conduce thereto. He is a serious investigator who employs evidence in accord with its reputable rules and procedures in other departments of thought. For many of his problems the available facts do not suffice; he can only put out tentative answers and wait hopefully for new knowledge. But when a weight of objective and conjectural evidence unites in indicating one definite result, that result may be considered every whit as reliable as comparable conclusions in other scholarly or common circumstances where we assume the matter to be settled—and find that the assumption works!

CHAPTER X

The Apocrypha

THE so-called Apocryphal books cannot be overlooked in any discussion of the antecedents of the English Bible. They were included in the Wycliffe Bibles, as a translation of the Vulgate Latin, and have formed part of the contents of the English Bible from Coverdale's edition (1535) down through the issuance of the Authorized Version (1611); though omitted sporadically, they continued to be printed with this version until early in the nineteenth century. They are also a constituent part of the Rheims and Douai version of the Roman Catholic church. The completed edition of Luther's Bible (1534) likewise made use of the majority of the apocryphal books. We find them embodied in the edition of the Vulgate authorized and endorsed by the Council of Trent, and especially edited by papal authority in 1592. Still earlier, they were included, first of all, in the collection of sacred books in manuscripts of the Septuagint, and they have come down through the ages in close association with those now found as part of the Hebrew Bible They are full of interest, most Bible students of today know too little about them But trends of thought now operate which promise to restore them to their rightful place.

The name "Apocrypha" (in Greek, ἀπόκρυφος) means "hidden, concealed" Originally the word seems to have been entirely appropriate, for it was given to such works as were prepared for certain sects or companies of heretical believers, who carefully concealed them from the public. The evidence of this fact is seen in some of the titles of these sacred books, for example, a papyrus of the first century has as its title, "A Holy and Secret Book of Moses, called the Eighth or Holy" The term "apocryphal" in its original sense was thus honorable, but later it came to specify books that were rejected

In the early lists of the sacred books of the church we find included

all the books of the Septuagint. Hence the early significance of Apocrypha did not include what it was made to cover in later times. Its earlier meaning covered such works as the Book of Jubilees and the Book of Enoch Jerome seems to have been the first to use it as applicable to all the books not found in the Jewish canon. He then classified as apocryphal all books found in the Septuagint which its translators did not find in the Hebrew Bible, from which they had prepared their version. In the time of the Reformation, Protestant churches adopted as their Old Testament Scriptures the books that had formed the Jewish canon, and thus came to disregard all other books found in the Vulgate and the Septuagint versions. The Roman Catholic church, on the other hand, declared the same books to be canonical as had the Alexandrian Jews, and applied the word "apocryphal" to books outside those of the Vulgate and Septuagint versions, which were often included in some versions The Protestant churches called the latter, that is, those spurious books not contained in the list of the Apocrypha, Pseudepigrapha.

The books designated "apocryphal" by the Protestant churches are those usually found in the Greek and Latin but not in the Hebrew Bibles That the reader may be able to locate them the following list presents them in their relations to the Protestant canonical books, remembering that our English order is practically that of the Greek and Latin versions. The books of Chronicles are followed immediately by I and II Esdras (Ezra-Nehemiah); Tobit; Judith; Additions to Esther, prefixed to, inserted in, and placed after the canonical portions of the book of Esther, after the Song of Solomon, Wisdom of Solomon; Wisdom of Jesus, Son of Sirach (or Ecclesiasticus); Baruch, with the Epistle of Jeremiah, Story of Susanna, prefixed to Daniel; Song of the Three Holy Children, inserted between verses 23 and 24 of Chapter 3, and Bel and the Dragon, appended to Chapter 12, I and II Maccabees following Malachi In the Vulgate these books follow Revelation Prayer of Manasses, III and IV Esdras All the above except the last three are included among the canonical books of the Roman Catholic church.

The apocryphal books of the ancient church, now designated as the "Pseudepigrapha" by Protestant bodies, are very numerous. They cover a wide range of topics and reveal many literary peculiarities. Some

of them are found in the best versions, and others are extant only as individual books. Search in European libraries and old monasteries of the East is frequently rewarded by the discovery of some new pseudepigraphical book or fragment. Direct references and hints in early ecclesiastical literature point to still others whose manuscripts have not yet come to light.

The books of the Apocrypha may be conveniently classified and described under the heads of (1) narrative (historical and legendary); (2) prophetic, and (3) didactic.

a The historical books are· (1) I Maccabees, a part of the history of the Jews in the Maccabean period. The book is extant only in Greek and in translations therefrom, though it was originally written in Hebrew. (2) II Maccabees, an abridgment of a large five-volume work by Jason of Cyrene It is extant in Greek, and is inferior in historical value to I Maccabees It is prefaced by two spurious letters to the Jews in Egypt (3) III Maccabees, a fragmentary history of an attempt to massacre the Jews under Ptolemy Philopator (217 B C), and their deliverance. It is found in the Septuagint, but not in the Vulgate, or Roman Catholic canon. (4) IV Maccabees, which is extant in Greek, and is a philosophical document discussing by a concrete illustration the superiority of mind over matter. It is found in some manuscripts of the Septuagint, but was not part of its canon (5) I Esdras (III Esdras in the Vulgate), which also is extant in Greek, and includes a recasting of Ezra-Nehemiah, along with a legend known to Josephus. The Vulgate embodies this book in an appendix, and hence it is not one of the canonical books of the Roman church.

b. The legendary are. (1) Additions to Esther; in the Septuagint there are several letters, prayers, and visions, inserted at intervals, to explain and amplify the story of Esther In the Vulgate these are gathered together in an appendix, with an accompanying note, stating that they are not in the Hebrew canon. (2) Additions to Daniel found in Greek in the versions of the Septuagint and of Theodotion. A Hebrew original of the Song of the Three Children was found by Dr. M Gaster in the Chronicle of Jerahmeel. (3) Tobit, a romance of the captivity, extant in Greek and Aramaic, written not later than the first century A.D There are three Greek and three Old Latin versions, besides Jerome's version. (4) Judith, a romance in Greek, recit-

ing how the city of Bethulia was delivered from the Assyrians by the shrewdness of Judith, a Jewish widow It is also one of the books of the Greek and Latin canons.

c The prophetic are· (1) Baruch, a book ascribed to Baruch, the amanuensis of Jeremiah, originally written in Greek probably after A.D. 70; it is found in Greek and Latin Bibles. To this is appended as Chapter 6 (2) The Epistle of Jeremiah, a letter ascribed to the prophet, claiming to have been sent to the Jews in Babylon. (3) The Prayer of Manasses, which purports to be the prayer of Manasseh while in prison (II Chron. 33); it is found in many Greek manuscripts appended to the Psalms, in the Vulgate it follows the New Testament, as do III and IV Esdras, and is not in the Roman Catholic canon. (4) IV Esdras, called II Esdras in the Authorized Version, but III Esdras when Ezra and Nehemiah are counted as one book, as in the Greek It consists primarily of an alleged apocalypse of Salathiel, to which, however, some other material has been attached. The original Hebrew of this book is lost, as well as the Greek translation from which apparently the extant versions were made. It is now found only in Latin, Syriac, Arabic, Ethiopic, and Armenian, with a few traces of other translations as well It was relegated by the Roman church to its appendix as not canonical.

d. The didactic are: (1) Wisdom of Jesus, Son of Sirach (commonly called Ecclesiasticus); it is one of the greater books of the Apocrypha. Much of its bulk consists of sage observations on life and conduct, in a style comparable with the Book of Proverbs; also it has discussions of "wisdom" Its praise of ancient worthies (Chaps. 44-49) is a famous passage. It was originally written in Hebrew by a Palestinian Jew, but the book as we know it is unique in that it contains the account of its translation into Greek by the author's grandson. For many centuries we were dependent on this Greek text and on the Syriac, likewise made from the Hebrew. But among the amazing treasures of the Cairo genizah were found considerable portions of this original Hebrew, although in late, and somewhat corrupt, manuscripts. (2) Wisdom of Solomon, which is found in the Greek Bible and was probably written by an Alexandrian Jew of the first century It is a very able and altogether impressive book of ancient Jewish philosophy.

These apocryphal books are probably most familiar to many Protestants through their presence in older printings of the King James Version, notably in old family Bibles Fortunately, however, this situation is being corrected through the revived interest in the Apocrypha manifest in recent years The statements as to the origins of these books, in the brief introductions just given, must now be held in abeyance while we await detailed information about the notable find of ancient Hebrew manuscripts in a cave near the Dead Sea, as announced in April, 1948. It will be recalled that in a previous chapter the vague terms of the press account were cited to the effect that the group contained apocryphal books not hitherto known to have existed in Hebrew. We must await their publication before any conclusion may be drawn as to their bearing upon problems of the Apocrypha

Leaving aside the Apocrypha, we turn to a large body of ancient Jewish literature known as the pseudepigraphical books. The title is an allusion to the fact that they claim an authorship which is clearly false; late as they are, they purport to be revelations given to one or another famous individual of far antiquity. One of them, the Book of Enoch, is quoted in the New Testament (Jude 14b), and others are quoted in some of the church fathers as if authentic and authoritative.

There are various classifications of these books, but it is convenient to treat them as, (1) legendary or Haggadic narrative, (2) apocalyptic, (3) poetical; (4) didactic.

1. The legendary. (1) The Testament of Adam, extant in Greek, Latin, Syriac, Arabic, and Ethiopic, (2) The Book of Jubilees (or Apocalypse of Moses), a commentary on Genesis, extant in Ethiopic; (3) Testaments of Abraham, Isaac, and Jacob, found in Greek, Slavonic, and Rumanian, (4) Apocalypse of Abraham, extant in Slavonic, from the Greek, (5) Testaments of the Twelve Patriarchs, extant in Greek and Latin; (6) Life of Asenath (wife of Joseph), extant in Greek, Syriac, and Latin; (7) Testament of Job, extant in Greek; (8) Testament of Solomon, extant in Greek; (9) Book of Noah, a fragment found in the Book of Enoch; (10) Penitence of Jannes and Jambres, extant only in Latin and Anglo-Saxon fragments

2. Apocalyptic: (1) Book of Enoch, originally written in Hebrew or Aramaic, extant in Greek, Ethiopic, and Latin; (2) Secrets of Enoch, extant in Slavonic only; (3) Sibylline Oracles, extant in Greek

and Latin; (4) Assumption of Moses, extant in Latin, quoted in Jude; (5) four Apocalypses of Baruch, extant in Greek, Slavonic, Ethiopic, and Syriac; (6) The Rest of the Words of Baruch, or Paralipomena of Jeremiah, extant in Greek and Ethiopic; (7) Prophecy of Jeremiah, attached to the Epistle of Jeremiah in Ethiopic manuscripts, (8) Ascension of Isaiah, extant in its entirety only in Ethiopic, but fragments exist in Greek, Latin, and Slavonic; (9) Apocalypse of Elijah, extant in Coptic; (10) Apocalypse of Zephaniah, extant in Coptic; (11) A Revelation of Moses, extant in Hebrew, (12) An Apocalypse of Esdras, extant in Syriac; an Ethiopic manuscript of a book by the same name is in the British Museum; there are several other books of less note under this classification that are either quoted or referred to by various ancient authors.

3. Poetical· (1) Psalms of Solomon, eighteen Psalms in Greek that were once translated from Hebrew, (2) Additions to the Psalter: Psalm 151 in the Greek, three apocryphal Psalms in Syriac—all probably of Jewish origin

4 Didactic (1) Magical Books of Moses, extant in papyri found in Egypt; (2) The Story of Ahikar, the cupbearer, steward, signet keeper, and overseer of accounts to Esarhaddon (cf. Tobit 1 21 f.).

All the Apocrypha and Pseudepigrapha were produced between about 250 B.C. and some time in the early Christian centuries. They were written by devout and loyal persons who were deeply concerned for the welfare of their people, and anxious to serve their religious needs The Pseudepigrapha, it is true, made spurious claims of authorship; how far the device misled the earliest readers it is difficult to say, but certainly we must beware of passing judgment upon the real authors on the basis of modern standards of literary ethics Just as the expanders of the pentateuchal laws felt that they were working in the spirit of Moses, so these writers were doubtless innocent of any intent of fraud Their integrity is in a way attested by their success among devout Jews of their time And indeed it is a success that need not surprise the modern reader, for the religious earnestness of the authors and their elevation of thought are fully apparent, notwithstanding numerous ideas that have no power over our minds. We have seen how these books were carried into the numerous editions of the Septuagint, into the Vulgate, and into several other versions of

later date The church fathers now and then quoted from them, and the Roman church formally adopted many of them as part of their Biblical canon. But the spread of learning and the quickening of a spiritual life in Reformation times cut down the Biblical canon of the Protestant churches to the limits of the ancient Hebrew canon. This action led to increasing disregard of the Apocrypha and its consequent disappearance from most editions of the Bible.

In 1892, C. J. Ball issued the *Variorum Apocrypha,* being the King James Version with variant readings. The Revised Version of the Apocrypha appeared in 1895. A notable publication was R. H. Charles' two-volume *Apocrypha and Pseudepigrapha* (1913) with introductions and notes. But all these are now surpassed by the translation into modern speech published by Edgar J Goodspeed in 1938, and incorporated into *The Complete Bible* in 1939. It is of unique significance as the only English translation made throughout direct from the Greek. The Revised Standard Version is preparing a new translation.

Why were the apocryphal books not received into the Biblical canon of the Old Testament? What constitutes the real difference between the two classes of literature? Who decided what should be Bible and what should not be Bible?

The answers to these questions are not simple, but the researches of scholars have provided us with the main clues to them. Since the formation of the New Testament is better known than that of the Old it throws much light upon the latter. The New Testament arose as a collection of smaller groups of Christian writings, namely, the letters of Paul, the Gospels, the general or Catholic letters (with which Acts came to circulate), and apocalypses. The primary motive for the collection and use of these and other writings was their value in the religious life of the churches As a part of the movement to define more clearly the Christian faith which became necessary in the developing church, the attempt was naturally made to distinguish "authoritative" writings and writings which might be used along with the Jewish Scriptures in the public services of worship The books which were eventually rejected are sometimes called New Testament Apocrypha, but they never achieved the same status as those of the Old Testament either singly or as a group. Yet among the early Christians a number of them at various times and places were re-

garded and used as Scripture. Included in actual manuscripts or cited as authoritative were the Shepherd of Hermas, the Letter of Barnabas, I and II Clement, the Revelation of Peter, the Gospel of the Hebrews, the Didache or Teaching of the Apostles, the Preaching of Peter, the Wisdom of Solomon, the Psalms of Solomon, III Corinthians, and the Apostolic Constitutions. Others appear in various lists of disputed or rejected books, e.g., the Acts of Paul, Book of James, Gospel of Thomas, etc. The chief of these writings or the main portions of them were published in a convenient English edition by M. R. James in 1924.

The first actual New Testament appears, however, to have been compiled by a heretic, the Gnostic Marcion, about A.D. 140, for the purpose of supplanting the Jewish with a Christian Scripture. His collection consisted of the Gospel of Luke and ten letters of Paul, i e, exclusive of the Pastorals and Hebrews. By the end of the second century a New Testament Scripture as distinct from an Old had come into existence, but for over two centuries much geographical variation in its contents existed. By *ca.* A.D. 200 our four Gospels and thirteen letters of Paul were almost everywhere recognized. Opinion varied greatly on the rest, from the liberal view of Alexandria, where Clement used a canon of at least thirty-three and Origen of twenty-nine books, to the conservative East, where Acts and Hebrews were not admitted until the fourth century, the three major Catholics (I Peter, I John, James) not until the fifth, the remaining Catholics not until even later, and Revelation officially not at all. Rome seems to have taken that median view which finally prevailed, although Hebrews was slow to be accepted in the West. It is not until A.D. 367 in a festal letter of Athanasius, Bishop of Alexandria, that exactly our twenty-seven books appear in an extant official list But its final determination is doubtless to be associated with the crisis in which Christianity under Constantine became the official religion of the Empire.

The Old Testament also arose in the form of separate collections, namely, the Pentateuch (Torah), the Prophets (Nebi'im), including the historical books, and the Writings (Kethubim). Much less is known of the exact dates of these and of the process of their formation. The Torah, whose nucleus was apparently the book of Deuteronomy discovered in 621 B C, is thought to have been in use as Scripture by

400 B.C., the Prophets some time between 250 and 150 B.C. The group of books in the Writings is referred to as the "other books" in the preface to the Wisdom of Sirach, about 132 B.C., but its exact content at that time is unknown and in fact continued to be disputed for two centuries. Headed by the Psalter and the poetical books Job and Proverbs, it eventually came to consist of these plus the Five Rolls (Megilloth) associated with various festivals (Song of Songs, Ruth, Lamentations, Ecclesiastes, Esther) and a group of later writings, Daniel, Ezra-Nehemiah, and Chronicles. At the time of the discussions at Jamnia, about A.D. 90, Esther was still in dispute. The determination of the contents of each of these groups may probably be associated respectively with the crises of the exile and return, the persecutions under Antiochus Epiphanes, and the destruction of Jerusalem in A.D. 70.

Certain general conclusions may be drawn from the data. The religious life of the believing community quite evidently preceded the collection and use of its writings as authoritative and sacred Scripture. The latter process was stimulated and accelerated by various crises involving the need for defining the faith, for an authoritative statement and guide to be used in instruction and worship. The writings selected were such as had proved themselves of religious and inspirational value in actual usage. Authorship by certain great leaders, or association with the immediate circle of such leaders, helped to secure recognition for a book. Thus among the Jews the attempt was made to define a "prophetic" period (Moses to Ezra) and among the Christians, an "apostolic" circle or period. When differences of opinion on the authenticity or value of a writing existed, the pronouncements of outstanding churches and leaders were influential. Such judgments generally involved questions of authorship, antiquity, authenticity, language and place of origin (Old Testament), religious and ethical values, harmony with other books, and general accuracy and dignity of contents. It was manifestly impossible in a collection of books of such variety as is contained in the Bible to be consistent in all of these regards. Nor were the evaluators sufficiently informed on many points. Sometimes they sought to harmonize the books by allegorical and other methods. Sometimes in the early period, and again in early Reformation times, they distinguished books of greater and lesser

value within the canon. The last step in the process of canonization was the decisions of church councils But in reality these only officially confirmed the results of a development representing a growth over a long period of time and the eventual emergence of such books as by their intrinsic merits proved to be worthy of preservation, acceptance, and use.

PART TWO

The New Testament

CHAPTER XI

Writing and Manuscripts in General

THE New Testament differs widely from the Old in available resources for the study of its text There is an abundance of manuscripts, several of them reaching to the third Christian century, that is, only about two hundred years from the original writing of the books and in some cases the interval is still shorter. Also the versions of the New Testament are several centuries nearer the original than are those of the Old Testament This fact gives them much higher value than can be credited to those of the Old. On the other hand, the larger number of early and valuable manuscripts of the New Testament reduces the comparative value of the versions.

The books of the New Testament come down to us in Greek, most of them written in the first century. Most of the epistles of Paul, the earliest of the books, were written as letters to the churches which he had founded and fostered, and not one of them was intended by him to be preserved as a permanent part of a collection of sacred books Indeed, Paul does not seem to have given any directions regarding his letters, except that occasionally he requested that they should be read before a church or interchanged with a letter sent to some other church (cf. Col. 4:16). They preserve the epistolary form even when, as in the case of Romans, the treatment is more elaborate and systematic than usual with him. The individuality of the writer stands out in greater boldness, and the familiar handling of themes in such direct address gives a certain personal touch and interest not found in formal literary documents.

These letters of Paul are our earliest records of the progress and expansion of Christianity. Paul's intimate relationship with the early churches and his daily burden of soul for them (cf. II Cor. 11:28) give them a special value From hints and direct statements in these letters he must have carried on an extensive correspondence (II Thess. 3:17;

Col. 4 18). He received letters or messages from his churches (I Cor. 16 3; 7:1) and sent to them other letters (cf. II Cor. 10:10; I Cor. 5:9) besides those preserved to us in the New Testament. The so-called Catholic Epistles, James, I and II Peter, I, II, and III John, and Jude, have more of the form of literary epistles. Some of them were evidently intended, if not for general Christian reading, at least for large numbers of persons.

The Gospels are the written reports of the facts and interpretations known or gathered by their authors concerning the life of Jesus on earth. They used written records in their compilations, for direct discourse is introduced as if it were the identical words of the speakers. John's Gospel stands quite alone, and presents a view of the life of Jesus distinct from the first three—the Synoptics. Luke's narrative in the Acts is a setting forth in their order of events connected with the beginnings of the church and stretching to the arrival of Paul at Rome. Of all these the Gospels and the Acts seem to have been the only books of the New Testament that were obviously records intended to be of permanent and historical value. Yet even this interest appears to have been secondary to that of using the data in the preaching and teaching mission of the early churches.

After the books of the New Testament were written they were carried all over the Roman Empire. The Christians everywhere took care of them, and copied and multiplied them in the century immediately following their production Marcion, who was a devout teacher during the reign of Antoninus Pius (A.D. 138-161), makes appeal to a rule of faith which consisted of "the Gospel" and "the Apostolicon." This latter is known to have contained ten epistles of Paul, which were recognized by Marcion as authoritative. Soon after this date other writers, especially of the church fathers, quote and refer to various books of the New Testament as if they constituted an authoritative collection of sacred documents.

But we do not possess one of the original manuscripts either of Paul's letters or of any other of the books of the New Testament. Scholars such as Origen, Eusebius, and Jerome greatly stimulated Biblical learning, and caused the multiplication and preservation of its sacred manuscripts. That sacred calling was later confined almost exclusively to monasteries, of which there were hundreds in the Orient.

In the period of the ninth to the fifteenth century cursive manuscripts were produced in great numbers in these monasteries, each of which had its scribe or scribes, whose chief business was the copying of the sacred Scriptures The profession of scribe was so revered that a writer of the sacred books was exempted from working in the gardens of a monastery, lest the skill of his pen be marred by injury to his hands.

Since the original manuscripts have been lost, how shall we proceed to recover their contents? The process will be substantially that followed in restoring the text of the Old Testament (Chapter IX). In this case, however, we shall be obliged to employ a much greater quantity of highly significant data. We must examine the earliest extant manuscripts of the Greek, the versions which were translated directly from the Greek, and the quotations in the writings of the church fathers and others. The earliest extant Greek manuscript dates from the second century (not more than a hundred years after the writing of the New Testament books) and copies become increasingly frequent down to the invention of printing in the fifteenth century. In fact, many were copied after the printer began his work. The versions began to be made in the second century and continued to multiply until the tenth. Their evidence, however, in each case depends largely on the antiquity of the manuscripts still extant of such version and on the character of the version as a translation. The use of the New Testament made by the church fathers in quoting either from the original Greek or from one of the versions is valuable evidence for the reading of that text at the given date, and at a given place. On the other hand, the carelessness that some of the church fathers manifested in their quotations or references to current versions often diminishes their value for the textual critic. Both patristic evidence, as that of the church fathers is called, and versional evidence has been subject also to the same sources of corruption as the original Greek text. The diligent student of the text will, however, gradually discover the relative value of these ancient witnesses and accord them their due regard

The known manuscripts of the New Testament produced prior to the invention of printing now number several thousands They are found in public and private libraries and collections in almost every civilized country. Like the Septuagint manuscripts (see Chap. III),

they are likewise divisible into uncial and cursive groups of similar chronological distribution. Besides the New Testament manuscripts properly so called, there are many lectionaries or service books which consist of selections from some parts of the New Testament arranged for use in church services.

The oldest uncials are written on papyrus or on the more expensive and durable vellum or parchment leaves about quarto or folio size, usually with two and occasionally three or four columns on each page, in imitation of the papyrus roll. Papyrus was used for centuries in the ancient world as a convenient and inexpensive medium for writing. It was made from a reed which grew in Egypt along the Nile, in Italy, and elsewhere, and strips of it were glued together to form a long roll upon which the writing was done, usually in narrow columns for easy reading as the document was unrolled. Vellum, or parchment, was made from the skins of animals, especially calves, sheep, goats, and gazelles; the term "vellum" was originally used of the calfskin only, and "parchment" of the rest It was a more expensive material but came into early use. Not, however, until the second and third centuries A.D. did it begin widely to displace papyrus, at first especially for documents of literary or other importance Although papyrus was occasionally used as late as the ninth century among the Arabs, vellum became the chief writing material, and so continued until replaced by paper. Arabic paper—its process of manufacture probably borrowed from the Chinese—appeared as early as the eighth century, but in the West paper did not replace parchment in general use until the fourteenth and fifteenth centuries. Even then vellum was sometimes employed in Biblical manuscripts down into the seventeenth century. In printing, which began about the middle of the fifteenth century, paper was of course the usual medium. Another interesting transition occurred in the development of the codex or modern book form to replace the roll. The old Roman wax tablet probably furnished the model for it. The change commenced at about the beginning of the Christian era, and was promoted, if not initiated, by Christian usage

Manuscripts as a rule were written with no space between the words or sentences and, in the oldest uncials, with few pausal marks and no accentuation of words Certain words, the so-called *nomina sacra*, were usually abbreviated and marked by a superlinear stroke The

actual appearance of such manuscripts may be seen in the Plates. In English letters an early uncial would thus look somewhat like the following passage (John 1.1-4):

INTHEBEGINNINGWASTHEWORDANDTHE
WORDWASWITH$\overline{\text{GD}}$ANDTHEWORDWAS$\overline{\text{GD}}$
THESAMEWASINTHEBEGINNINGWITH
$\overline{\text{GD}}$ALLTHINGSWEREMADETHROUGHHIM
ANDWITHOUTHIMWASNOTANYTHING
MADETHATHATHBEENMADEINHIMWAS
LIFEANDTHELIFEWASTHELIGHTOF$\overline{\text{MN}}$

This method of writing gave to subsequent scribes and copyists considerable liberty as to the divisions of words and sentences. In this very quotation one such variant occurs. In the margin of the Revised Version we find. "Or, was not anything made. That which hath been made was life in him; and the life, etc." But the text puts the period after "hath been made." This shows how the copyist, as soon as he abandoned the endless-chain method of writing, could, by separating his words at different places, produce different meanings. Just this did occur in numerous places in the New Testament and gave rise to many of the variant readings collated from the different groups of manuscripts. Another class of variants consisted of expansions of the text in order to explain certain events mentioned; particularly is this frequent in the Gospels and the Acts.

Again it is evident that the same kinds of errors already enumerated in the Hebrew Old Testament were operative in producing variant readings for the Greek manuscripts. Of the involuntary sort of error caused by the carelessness of scribes probably nothing more needs to be said, except that the Greek did not suffer from the absence of written vowels as did the Hebrew. But the absence of written accents and breathings in the early manuscripts also caused mistakes; nor did the Greek have any division between words. An interesting confusion of one letter for another is found in I Corinthians 13.3 where the Beatty papyrus, P^{46}, came to the support of Vaticanus, Sinaiticus, and a few other witnesses in reading *kauchēsōmai* ("boast") for *kauthēsomai* ("burn") (see Plate 29), a reading which had already been adopted by Goodspeed in his translation of the New Testament as the more probable original. The element of intention, however, may have entered, because to the scribe acquainted with the later custom

of burning Christians at the stake the other reading doubtless seemed the more probable An example of interpolation from the margin is probably to be found in the explanation of the troubling of the waters by an angel in John 5 3-4 Assimilation between the Gospels is frequent. Much of this is unintentional, but some, such as the addition of the incident of the spearing of Jesus' side in Matthew 27 49 from the Johannine account of the crucifixion, is deliberate harmonization.

Other types of intentional change are stylistic and grammatical, of which several may be seen in the Apocalypse; liturgical expressions, such as the addition of the doxology to the Lord's Prayer in Matthew 6:13 and, in a few manuscripts, also in Luke, corrections, such as the substitution of "prophets" for "Isaiah the prophet" in Mark 1:1 or the omission of "Jeremiah" in Matthew 27 9. The longer and shorter appendices found after Mark 16 8 are attempts to restore or supply the proper ending. Theologically motivated variants are also found now and then, reflecting sometimes the views of different schools of believers in various parts of the Christian world. The most famous is the trinitarian passage in I John 5.7 f., the omission of which in the Revised Version caused much excitement The group of additions in the last chapters of Luke and elsewhere not found in the Western text are clearly doctrinal in origin and have been dropped to the margin of the new Revised Standard Version of the New Testament The addition in Luke 22.43-44 is thought to be aimed at the Docetic heresy which claimed that Jesus did not actually suffer. In Luke 23 32 some manuscripts omit "other" in the phrase "two other malefactors" for obvious reasons. A variant like "God" for "who" in I Timothy 3·16 may be debatable, however, since it could at least have been suggested by a confusion of letters ($\overline{\Theta C}$ for OC).

These and other similar differences in the text began to exist very early, doubtless with the first copyist. In fact, the early period of transmission was productive of most variation, because the documents had not yet become sacred Scripture, and the scribes were often untrained. There was no compelling interest in always preserving the exact wording of the original. The situation was similar to that reflected in the Matthean and Lucan evangelists' use of the Gospel of Mark. Tatian's Diatessaron is also an example of the rather free treatment of the text in the early period Origen and Jerome were greatly disturbed

by the evident corruptions of the Biblical texts in their days, and, as we have seen, they made attempts to remedy the situation Recensions of the text, such as those attributed to Hesychius of Egypt and Lucian of Antioch, were similar endeavors. When the New Testament literature became canonical and Christianity legalized, efforts to standardize the text received a special impetus as a part of the general movement toward fixation and definition of canon, creed, and ecclesiastical organization. We shall see how this resulted in standardized editions of the various versions and of the Greek text.

No Hebrew or Greek manuscripts earlier than the ninth century carry a date. The time of writing of any particular undated document is determined by one or more of several means. Some of these are (1) the material on which a document is written, (2) the form of the letters, (3) the style of writing, (4) the use or absence of the Ammonian sections of the Gospels, (5) the Eusebian canon and section numbers, (6) the system of Euthalius in the Acts and Epistles

Apparently the earliest extant attempt in Greek manuscripts to break up the text into paragraphs is found in Codex Vaticanus Tatian, however, in his Diatessaron seems to have divided the Gospels into larger section or "titles," to whose numerical designation was appended a summary of contents, either at the beginning of the Gospel or at the top or bottom of the pages or both.

Eusebius of Caesarea, who died A.D. 340, was probably stimulated by an idea of Ammonius of Alexandria (about A D 220) to work out a novel method of harmonizing the Gospels. Taking Matthew as his standard, he marked off in it 355 sections; in Mark, 233 (later carried out to 241 by the addition of 16 8-20); in Luke, 342; and in John, 232. These sections were marked by Greek letters with a fixed numerical value. To make practical his plan, ten lists or canon tables were made, in which all the parallel passages were classified by the section numbers. The first table contained all the passages common to the four Gospels; the second, those common to the first three; the third, those common to Matthew, Luke, and John; the fourth, those common to Matthew, Mark, and John; the fifth to the ninth tables, those common to different pairs of Gospels; and the tenth, those found in one only. Many manuscripts give these tables in a section preceding the text of the Gospels, often with a letter written by Eusebius to Carpianus

explaining the system. In the text itself, also, the table and section number will usually be given in the margin and sometimes in addition at the bottom of the page together with the corresponding section numbers from the other Gospels Nestle prints this data in his editions of the Greek New Testament

In the latter part of the fourth century Euthalius of Alexandria introduced into Acts and the Pauline and General Epistles certain divisions called *stichoi*. These were indicated by a mark set at every fiftieth line. Though they were arbitrary divisions, they served as guides and checks for the copyist. The same term was later applied to another division, called *comma* or *colon*, which was made according to the sense. These devices, however, were not universally adopted, nor are they present in our modern Bibles. But their use sometimes supplies us with a key for ascertaining the date of the uncial manuscripts.

CHAPTER XII

The Greek Manuscripts of the New Testament

THERE are nearly 4,500 known Greek manuscripts of the New Testament. These include over 200 uncial documents, counting all fragments, which range in date from the second to the ninth century, about 100 papyri and ostraca, mainly uncial, approximately 2,500 cursive documents dating from the ninth to the fifteenth century, and nearly 1,700 lectionaries, some of which were written in uncials as late as the twelfth century.

Unfortunately, comparatively few of these witnesses contain the complete New Testament, and many are very fragmentary, especially those among the early uncials and papyri. Nevertheless, so far as the quality and quantity of the evidence go, the New Testament may be said to be by far the best-preserved ancient document in the world It should be noted, too, that the manuscripts reflect in content an early grouping of the books which was partly the result of their canonical history and partly a matter of convenience in their circulation. Four such groups may be generally distinguished as follows: (1) the Gospels; (2) the Acts and Catholic (General) Epistles; (3) the Pauline Epistles; (4) the Apocalypse. The entire New Testament is substantially contained in only two uncials (Sinaiticus and Alexandrinus, most of Matthew being missing in the latter) and in about 50 cursives. Approximately 120 other manuscripts contain all but the Apocalypse, and about 50 all but the Gospels. The most numerous single group is naturally that of the Gospels, with some 1,500 documents, and the next in order would be combinations of (2), (3), and (4), with 250 representatives Manuscripts containing each of the last three groups by itself number only about 30, 35, and 45 respectively The remainder constitutes material too fragmentary to classify.

To designate these various manuscripts simply and conveniently, a system has been developed similar to that already indicated for the Old Testament. The uncials have been indicated mainly by capital letters, but officially they also carry an arabic numeral preceded by a capital "O." Several of the fragmentary documents, especially of recent discovery, have only this official identification (e g., O124) Papyri, ostraca, and talismans are similarly indicated with a capital letter and superlinear number (e.g., P^{45}, O^{20}, T^{5} respectively). The cursives are simply designated by arabic numerals, in the case of lectionaries (uncial and cursive) preceded by an "l." Various abbreviations, indicating the contents of the manuscripts, are also in use, e.g · Evan , Ev , E, e, for the Gospels; Act., A, a, AK, for Acts and the Catholic Epistles; Paul., P, p, for the Pauline Epistles; Apoc , Ap , R, r, for the Apocalypse; Evst. (Evangelistarion), lect., l, for a lectionary of the Gospels; Apost. (Apostolicon) for a lectionary of Acts and the Epistles.

Among the most fascinating stories in Biblical lore are those connected with the discovery, transmission, and preservation of early manuscripts. Their production was sometimes a matter of imperial edict, as when Constantine the Great ordered from Eusebius, the famed historian and Bible scholar of the fourth century, for the churches of Constantinople, the preparation of fifty manuscripts of the Bible, to be written "on artificially wrought skins by skilful calligraphists " The persecutions and wars of the Middle Ages destroyed such documents in large numbers. Fire, flood, and fanaticism combined to wipe out these perishable treasures of Christendom. But some were sheltered in out-of-the-way fastnesses, in monasteries upon the mountainside, in the sacred precincts of carefully guarded churches, and in the palaces of kings. They were given as presents, they were borrowed, bought, and stolen. Their intrinsic value was almost always underestimated, and they were subjected to inexcusable risks of being hopelessly lost

Fortunately, however, there were some haunts unreached by the demons of destruction, wherein these treasures were preserved. Large-hearted benefactors and long-headed Christian statesmen secured many of these documents and deposited them where they are safe, and can be available for scholars through all time.

In the following account of New Testament materials some of the more important manuscripts for the study of the text will be described. Where the data regarding a document have already been given in connection with the Septuagint, only such additional information as pertains particularly to the New Testament will be presented.

Since it will also be desirable in describing a manuscript to say something about its textual characteristics, we must employ some terms which are not properly explained until Chapters XV and XVI are reached. A brief word of elucidation may therefore be helpful at this point. The work of textual criticism in the New Testament has resulted in rather wide agreement on the identification of certain general types of text, the nature and significance of which will be considered later. We shall refer to them here under the currently popular designations as follows· Alexandrian, Western, Caesarean, Eastern, and Byzantine The unsatisfactory nature of most of these names has led Sir Frederick Kenyon recently to devise a Greek-letter nomenclature, calling them respectively the Beta, Delta, Gamma, Epsilon, and Alpha texts. All of these except the Byzantine represent forms which were probably extant in the second to fourth centuries; the Byzantine is a "standardized" edition which became current in various forms from the fifth century on It should be kept constantly in mind that the basic text of all of these is substantially (perhaps 90 per cent) the same, and that much mixture of the so-called types exists. As we shall also see farther along, various subdivisions of them have been suggested and a few more intimately related groups have been identified within them, such as Family 1, Family 13, and others.

The oldest Greek manuscripts of the New Testament are papyri We have already indicated their approximate numbers They did not constitute a very extensive source of textual material, however, until the priceless discovery of the group of codices known as the Chester Beatty Papyri, some of which were described in connection with the Old Testament. Three of these manuscripts contain portions of fifteen New Testament books written in uncial hands ascribed to various parts of the third century. We have here, therefore, the oldest extensive text in existence, the Gospels and Acts being dated to within a century and a half of the autographs

The codex of the Gospels and Acts (P^{45}) contains 30 of an original

110 leaves (Matthew—2, Mark—6, Luke—7, John—2, Acts—13), dating probably from the early third century. The text is written in one column of about 39 lines on leaves approximately 8 x 10 inches in size. The text of Mark is Caesarean in character; that of Luke and John, Alexandrian and Western. Matthew is too fragmentary for judgment. Acts agrees in general with the readings of the oldest uncial (א [Aleph] A B C) against the Western text.

The codex of the Pauline letters (P^{46}) contains 86 of an original 104 leaves, 56 of which are in Mr. Beatty's collection and the remaining 30 in the possession of the University of Michigan. The date and format are similar to P^{45} but the leaves are smaller, averaging about 5½ x 8¾ inches. The document has been dated as early as A.D. 200 The letters occur in the following interesting order: Romans, Hebrews, I and II Corinthians, Ephesians, Galatians, Philippians, Colossians, I Thessalonians. The most serious gaps are Romans 1:1-5:17, I Thessalonians (only a few scraps remain), II Thessalonians, and Philemon. The Pastoral letters were apparently not originally present The text is closer to that of the Alexandrian than of the Western type, supporting the oldest uncials in many interesting readings, such as "to boast" for "to be burned" in I Corinthians 13·3 and the omission of "in Ephesus" in Ephesians 1:1.

The third codex, that of the Apocalypse (P^{47}) has 10 of an original 32 leaves, containing Revelation 9:10-17:2 with some mutilations. The size and format resemble those of P^{45}, but the date is considered late third century. The text agrees in general with the group, א A C P, especially א C, representing the earliest known type. This manuscript remains in the Dublin collection of Mr. A. Chester Beatty. Although the Michigan papyri had been published separately by Professor H A. Sanders in 1935, the whole collection was issued in an excellent fourteen-volume facsimile and text edition by Kenyon for the British Museum in 1933-41 (see Bibliography).

The other papyri are all quite fragmentary Most of them date from the third or fourth century and are apparently from codices rather than rolls. A fragment of John 18 (P^{52}) in the John Rylands Library of Manchester, discovered by C. H Roberts among the Grenfell papyri and published by him in 1935, (see p 67) is dated by some scholars at the middle of the second century, and would thus be the oldest

extant part of the New Testament. But in the same year of 1935 Bell and Skeat published three leaves of a codex which they believed to be of about the same date and "the earliest specifically Christian manuscript yet discovered in Egypt" This claim is open to question, as is also their view that the text represented a hitherto unknown Gospel. Its parallels to John and the Synoptics, especially Luke, seem rather to indicate that it is a free reproduction, perhaps from memory, of our present Gospel tradition The papyri generally support an ℵ-B type of text with some Western attestation, and the evidence of a dozen of them in addition to the Beatty manuscripts has been incorporated into the text and apparatus of the recent editions of the Nestle Greek New Testament.

As indicated in our discussion of Septuagint manuscripts, some of the oldest uncial vellum codices are complete Bibles. Only a few words regarding their New Testament contents and characteristics need be added here The fourth-century Codex Vaticanus (B, O3) contains 142 leaves in the New Testament, unfortunately breaking off at Hebrews 9 14. The Pastorals, Philemon, and the Apocalypse are therefore missing. This manuscript is the best representative of the Alexandrian type of text It omits, for example, the following passages. Matthew 16:2-3, Mark 16 9-20, Luke 22·43-44, John 5.4, 7·53-8.11, Romans 16 24. The doxology of Romans occurs after 16:23 A peculiar chapter division is given in the Gospels and a double system is used in Acts.

Codex Sinaiticus (ℵ, O1), also of the fourth century, is one of our two complete uncial New Testaments, and it contains in addition to our twenty-seven books the Shepherd of Hermas and the Letter of Barnabas. Its canon is thus identical with that of Origen, who flourished in the first half of the third century. Tischendorf spent the night at the Mount Sinai convent where the manuscript was discovered in making a copy of Barnabas, of which no complete Greek copy was then known. The text of Sinaiticus closely resembles that of Vaticanus. It has those same omissions noted above except the one in Luke; but the Lucan passage is marked as spurious by the first corrector. The two also agree in a number of notable readings, e g, "only begotten God" in John 1.18 and "church of God" in Acts 20 28 Yet the differences are of such quantity and quality as to indicate that the codices

are independent of each other. Even the order of books is different, Vaticanus having the AKP, Sinaiticus the PAK sequence. In Sinaiticus the Eusebian canon and section numbers have been added in red ink by what may have been a contemporary hand.

Codex Alexandrinus (A, O2), of the fifth century, has 143 leaves in the New Testament, in which it also is complete except for a few gaps The most serious of these have already been indicated (p. 58). In addition it contains the epistles known as I and II Clement, the latter incomplete. These documents appear here for the first time, and were published by Patrick Young, librarian of the Royal Library, in 1633, soon after the acquisition of the manuscript by Charles I. A Table of Contents shows that the Psalms of Solomon also stood at the end of the codex, but it is now completely missing Eusebian section and canon numbers, as well as chapter numbers and titles, are given. The text is Alexandrian in Paul, but Byzantine in the Gospels, representing here the earliest form of this recension. Of the passages cited above, for example, it omits only the Lucan and Roman The Romans doxology occurs after both 14.23 and 16 23 Agreement with the Vulgate in several respects led Hort to infer that Jerome made considerable use of a related text.

Another fifth-century uncial of great importance, in spite of its fragmentary character, is Codex Ephraemi Rescriptus (C, O4), a palimpsest of 145 New Testament leaves, preserving parts of every book except II Thessalonians and II John (see Plate 23). Wetstein first completely collated the manuscript in 1716, and Tischendorf published it in 1843-45 as his first major contribution to textual studies. The codex gives section numbers, and in the Gospels it has chapter divisions. The text is in general Alexandrian but shows mixture with other and later readings. It has only the Lucan and Johannine omissions of the group noted above.

We turn now to the consideration of a few of the more important codices preserving only the New Testament text. From several viewpoints the most interesting is Codex Bezae or Cantabrigiensis (D, O5), a fifth- or sixth-century bilingual (Greek-Latin) manuscript of the Gospels and Acts (1:1-22:29). The Gospels occur in the Western order Matthew, John, Luke, Mark. The Catholic letters were also originally present, but only a Latin fragment of III John (11-15) remains. The

codex was perhaps written in Gaul, and Theodore Beza secured it in 1562 from the monastery of St. Irenaeus at Lyons. Beza, a friend and disciple of Calvin, made little use of it in his editions of the Greek and Latin texts of the New Testament because of its wide variation from other manuscripts. He finally presented it in 1581 to the University of Cambridge, where it is today. It is the oldest known bilingual manuscript. The Greek and Latin scripts are very similar in appearance, large uncials written in uneven sense lines (*cola*) in a single wide column on leaves (510 extant) measuring 8 x 10 inches, the Greek on the left-hand page and the Latin facing it on the right. Scholars are not yet agreed on the exact relationship between the two. Many correctors—nine according to Scrivener—operated upon the text between the sixth and twelfth centuries

The most significant characteristic of Codex D is the quality of its text, for it is the most important Greek representative of the so-called Western type, a form marked by great variation from all others in what seem to be bold modifications and interpolations or additions. Most often in these it is in agreement with the Old Latin, frequently with the Old Syriac. Yet this type of text was an early and widespread form, as the writings of most of the church fathers of the second and third centuries testify. It is not surprising then that Bezae will also often be found reading with the Alexandrian codices against later witnesses. An interesting example of addition is the Sabbath saying attributed to Jesus by Luke 6 4-5. "On the same day, seeing someone working on the Sabbath, he said to him, 'Man, if you really know what you are doing, you are blessed, but if you do not know, you are cursed, and a transgressor of the law.'" (See Plate 36) On the other hand, since interpolation seems to be so prevalent in the Bezan text, certain instances of shorter readings were accorded great weight by Westcott and Hort in their edition of the Greek text (see Chap. XV), the non-Western additions being double-bracketed as "Western non-interpolations" These instances, usually supported by D and a few Old Latin manuscripts, could generally be explained as theologically motivated accretions to the text (e. g., in Luke 22.20, 24·3, 6, 12, 36, 40, 51-52). John 5 4 is also among the omissions "At all events," wrote Hort, "when every allowance has been made for possible individual license, the text of D presents a truer image of the form in which the

Gospels and Acts were most widely read in the third and probably a great part of the second century than any other extant Greek manuscript"

The codex was first published by Kipling at Cambridge in 1793 in two facsimile volumes. In 1864 Scrivener produced an edition in common type with full introduction and critical notes. The University of Cambridge in 1899 issued an excellent photographic reproduction.

In connection with Codex Bezae we should notice two other important Greco-Latin uncials which are of the same textual quality and are similarly written in sense lines One of these is Codex Claromontanus (D_2 or D^p, O6), a sixth-century manuscript of the Pauline Epistles located in the Bibliothèque Nationale, Paris It is written on 533 beautiful vellum leaves and, according to Beza, who was once the owner, it was discovered at Clermont, France The Royal Library bought the codex in 1656, and in 1852 Tischendorf published an edition of the text at Leipzig The other, Codex Laudianus (E_2, O8), is a sixth- or seventh-century manuscript of Acts, a prize possession of the Bodleian Library at Oxford, to which it was presented by Archbishop Laud in 1636. It had been brought to England in the seventh century and was known and used by Bede. The Western character of the text is modified by many Alexandrian readings. Tischendorf published it in 1870 in his *Monumenta Sacra Inedita.*

Among the significant discoveries of the twentieth century is the "Freer" or "Washington" Gospels (W, O32), a vellum codex of the fourth or fifth century purchased by Mr. Charles L. Freer of Detroit from a Cairo dealer in Egypt in 1906. It is now in the Freer Gallery of Art, Washington, D C. The manuscript contains the Gospels in the Western order written in a single, thirty-line column on 187 leaves about 5½ x 8¼ inches in dimension in a small, sloping uncial script. Professor H. A. Sanders of the University of Michigan, who first announced the find at a Chicago meeting of archaeologists in December of 1907, published an edition and photographic facsimile of the manuscript in 1912. Professor Goodspeed of the University of Chicago published a description and collation in 1914 The text of the document is curiously mixed, being Byzantine in Matthew and Luke 8:13-24:53, Alexandrian with some Western elements in Luke 1:1-8 12 and most of John, Western in Mark 1.1-5:30, and Caesarean in Mark 5:31-16:20

A peculiar addition, not found elsewhere, though partly quoted by Jerome, occurs after Mark 16:14. (See Plate 30.) The passages previously cited from Luke and John are omitted, as is also the Lucan genealogy.

In the collection bought by Mr. Freer was also a vellum codex of eighty-four very fragmentary leaves of the Pauline letters written perhaps in the fifth or sixth century. Known as the Washington Manuscript of the Pauline Epistles (I, O16), it is also in the Freer Gallery. Portions of all of the (fourteen) letters except Romans are preserved, and the textual character is Alexandrian. Professor Sanders published the pertinent data about it in 1918 as Part II of his volume on the New Testament manuscripts in the Freer collection.

Another important find of about the same time was the Koridethi Gospels (Θ, O38), so named from the monastery in the Caucasus area near the east end of the Black Sea to which it had once belonged. Although known since 1853, the codex had been moved to St. Petersburg in 1869 and later returned to a convent near Kutais, where it was "lost" for about thirty years until rediscovered in 1901 by Bishop Kirion. Eventually it was brought to its present location in the Library of Tiflis. Von Soden drew attention to it in 1906 in his edition of the Greek New Testament, and it was published by G. Beerman and C. R. Gregory in 1913. The manuscript is a vellum codex of the four Gospels of 249 leaves written, or, more accurately, drawn, in two columns in a rough uncial hand by a scribe who was not fully at home in Greek but seems to have known Coptic. The unorthodox script makes dating difficult, but opinion favors the ninth century over suggestions for an earlier (seventh or eighth century) period. R. P. Blake thought that the scribe may have been a member of a Georgian colony which was resident at Mount Sinai in the ninth century. The manuscript is not only an important witness to the Caesarean text but, as we shall see, played a significant part in the identification of this textual family. Of the passages which we have been noting, only the *pericope adulterae* (John 7:53-8.11) is absent.

A few other uncials of special value deserve brief notice Of important witnesses to the Alexandrian text, Codex Regius (L, O19) is a nearly complete Gospels manuscript of 257 leaves dating from the eighth or ninth century and now in the Bibliothèque Nationale, Paris.

It omits the *pericope adulterae*, leaving a blank space for it as many manuscripts do, and it has both the longer and shorter endings of Mark. Codex Sangallensis (Δ, 037), a ninth- or tenth-century uncial of the Gospels, also nearly complete, is Alexandrian in Mark only, the remainder being Byzantine. This manuscript, now containing 195 leaves, was written by an Irish scribe in the monastery of St. Gall, Switzerland, where it now remains; and it is provided with an interlinear Latin translation. It once belonged with Codex Boernerianus (G_3, 012) a ninth-century Greco-Latin codex (Western character) of the Pauline Epistles, now in Dresden. The following are some other documents of Alexandrian character: Coislinianus (H_3, 015), a sixth-century fragmentary manuscript of Paul (including Hebrews), twenty-two of whose leaves are at Paris and sixteen scattered in four or five other localities; Porphyrianus (P_2, 025), a ninth-century palimpsest New Testament (except Gospels) in Leningrad (in Acts Byzantine with some Western readings); Borgianus (T, 029), a fifth- or sixth-century Greek-Sahidic manuscript of Luke and John (fragmentary) in Rome; Monacensis (X, 033) a ninth- or tenth-century Gospels fragment in Munich; Codex Z (035), a Dublin fragment of Matthew from the fifth or sixth century, Zacynthius (Ξ), a somewhat fragmentary Gospel of Luke of the eighth century in London; Laurensis (Ψ, 044), a Mount Athos manuscript of the New Testament (except Revelation) from the eighth or ninth century, but with Matthew and much of Mark (1-8) missing, and the text in Luke and John mainly Byzantine. Laurensis also has both endings of Mark.

Three other codices of Western character should also be mentioned: Augiensis (F_2, 010), a ninth-century manuscript of Paul (including Hebrews in Latin only) in Trinity College, Cambridge; Mosquensis (K^{ap}, 018), a ninth- or tenth-century manuscript of Acts, Paul (including Hebrews) and the Catholic letters, in Moscow; Nitrius (R, 027), a sixth-century palimpsest fragment of Luke in the British Museum. Some Caesarean characteristics are displayed by an unusual group of four sixth-century codices of the Gospels written on purple parchment, two of them in silver and gold letters. The manuscripts are Purpureus Petropolitanus (N, 022) of Leningrad, Sinopensis (O, 023) of the Bibliothèque Nationale (fragment of Matthew), Rossanensis (Σ, 042) of Rossano, Calabria (Matthew and Mark), and Beratinus

(Φ, O43) of Berat, Albania (Matthew and Mark). Rossanensis and Sinopensis contain respectively eight and five miniatures of great interest because of their age and character. These codices seem to represent an early form of the Byzantine text.

The remaining uncials are chiefly representative of the Byzantine text and date mostly from the eighth to the tenth centuries. Special mention may be made of the Gospels codices Basiliensis (E, O7), an eighth-century manuscript in Basle, Cyprius (K, O17), a ninth-century Paris codex, Campianus (M, O21) of the same date and location, V (O31, Gospels, Moscow, 9 cen.), Λ (O39, Luke and John, Oxford, 9 cen.), Π (O41, Gospels, Leningrad, 9 cen.), and Ω (O45, Gospels, Mount Athos, 8/9 cen.).

The cursive manuscripts, like the later uncials, mainly reflect the Byzantine form of the text and therefore occupy a smaller place in the considerations of the textual critic. Several of them, however, also preserve an early text or one which contains early readings. Otherwise they are chiefly of value where the weightier authorities disagree and when the history of the text is to be reconstructed for what light it may shed upon the origins of variant readings The latter discipline is really a minor branch of church history Some manuscripts are also of interest and significance for their text illustrations and other decorative illumination illustrative of Byzantine art and bookmaking. We can mention only a few outstanding cursives representative of these various values.

Codex 33, the "Queen of the Cursives," as Eichhorn called it, is a ninth- or tenth-century Paris manuscript of the New Testament (except Apocalypse) and of the Prophets in fragmentary condition. From its Alexandrian character it was also judged by Hort to be the best of the cursives. A valuable copy of Acts, of the same type of text, is represented by Codex 81, a British Museum document of the New Testament (EAKP) written in A D 1044 and brought from Egypt by Tischendorf in 1853 Other cursives frequently Alexandrian in their readings are the following 424 in Paul (KP, Grottaferrata, 11/12 cen.); 517 (N.T., Oxford, 11/12 cen), 579 (Gospels, Paris, 13 cen.); 892 (Gospels, London, 9/10 cen); 1241 (EAKP, Sinai, 12 cen); 1342 (Gospels, Jerusalem, 12/13 cen), very mixed in Mark; 1739 (AKP, Athos, 10 cen.), the best of the cursives in Paul; 1852 in Romans

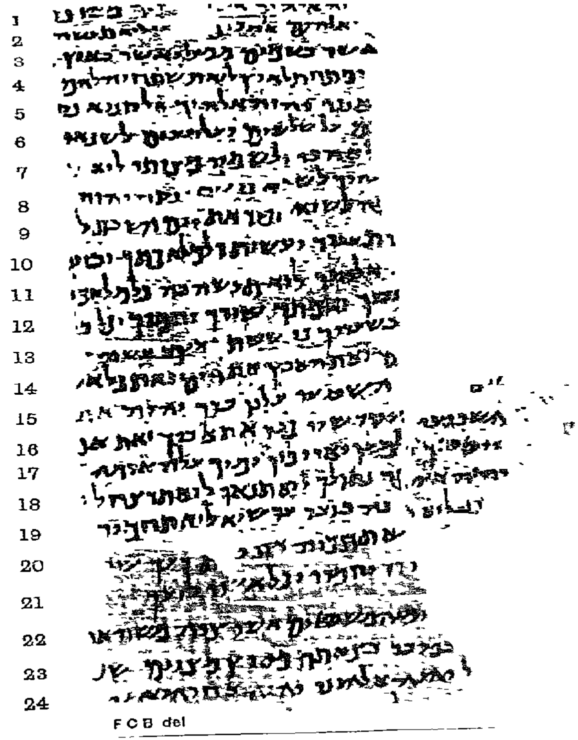
(AKPAp, Uppsala, 13 cen.); 1908 (Paul, Oxford, 11 cen); 2427 (Mark, Chicago, 14 cen. ?) The last, discovered about 1938 in Athens, is an unusual manuscript in every way It appears to have a text more Alexandrian than Codex Vaticanus itself, with which it agrees more than any other known document. It also contains sixteen excellently executed text illustrations of an antique Byzantine character. These and the text are in process of study and publication at the University of Chicago, where the manuscript is located

Caesarean readings are often found in the Gospels manuscripts 28 (Paris, 11 cen), a beautiful gold-on-purple-vellum document sometimes called the Empress Theodora's, 565 (Leningrad, 9/10 cen.), 700 (British Museum, 11/12 cen.), and the New Testament Codex 1424 (Maywood, Ill., 9/10 cen). The last, from the collection of the late President Franklin L. Gruber of the Maywood Lutheran Seminary, represents a family of related codices (see Chapter XVI). The groups known as Family 1 and Family 13 (or the "Ferrar" manuscripts) are also Caesarean in character. They are named respectively from Codex 1, a Basle manuscript variously dated in the tenth to the twelfth century, which was slightly used by Erasmus in the preparation of his 1516 edition of the Greek New Testament, and from Codex 13, a Paris manuscript, written in southern Italy in the twelfth or thirteenth century, as were two other members (124 and 346) of the original four in the group. The fourth, Codex 69, now at Leicester, was written in England in the fifteenth century. The most outstanding variation which these have in common is the reading of the *pericope adulterae* after Luke 21 38 instead of in John, and Luke 22:43-44 after Matthew 26 39.

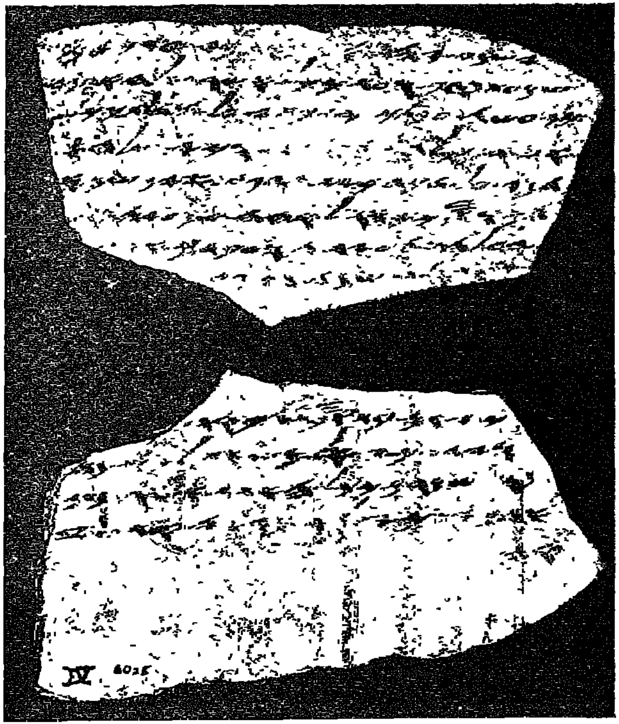
A number of Western readings are found in a group of related manuscripts of Acts, the best representative of which would now seem to be Codex 2412, a twelfth-century Praxapostolos (AKP) given to the University of Chicago in 1933 by the late Professor Ira Maurice Price Previous study had regarded Codex 614 as the head of this group, e.g., in J. H. Ropes's text of Acts (1926) and the work of Valentine-Richards, interrupted by death and posthumously published in 1934. Other manuscripts of this allied tradition are Codices 58, 383, 431, 876, 1518, and 2401. (See Bibliography: Kenneth Clark, *Six Praxapostoloi*



1 Page of a Biblical fragment from the genizah I Samuel 26 20-27 5
(By permission of the Oriental Institute)



2. The Nash Papyrus. Exodus 20 2-17



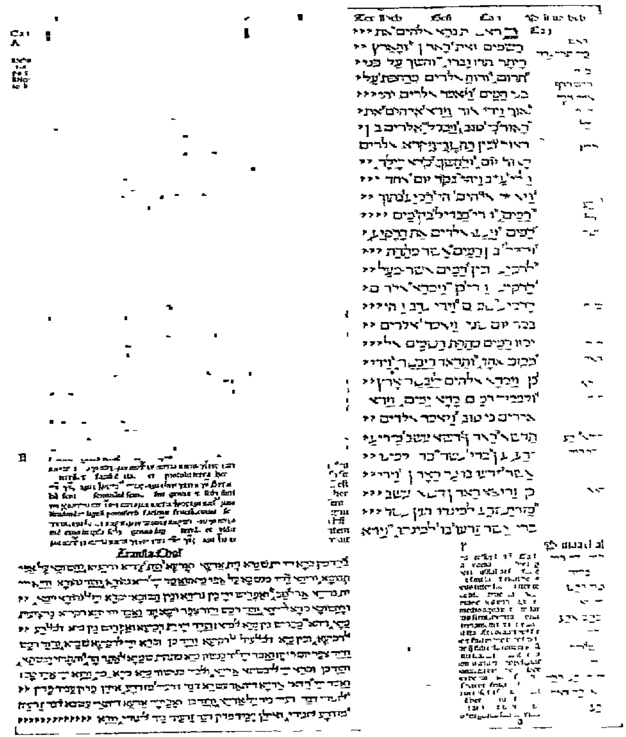
3 A Hebrew letter, sixth century B.C., found on the site of ancient Lachish (By permission of the Trustees of the late Sir Henry S. Wellcome.)



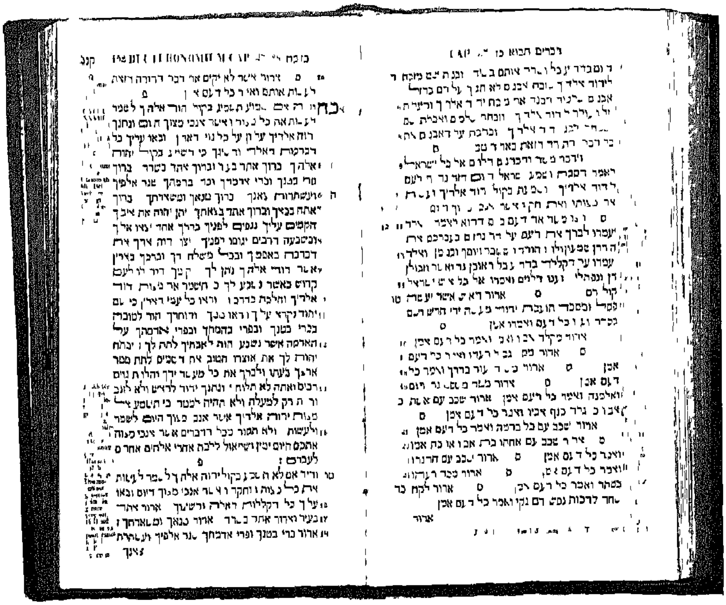
4 Clay stamp in the Oriental Institute inscribed with Hebrew text of Jeremiah 48 11 (By permission of the Oriental Institute.)



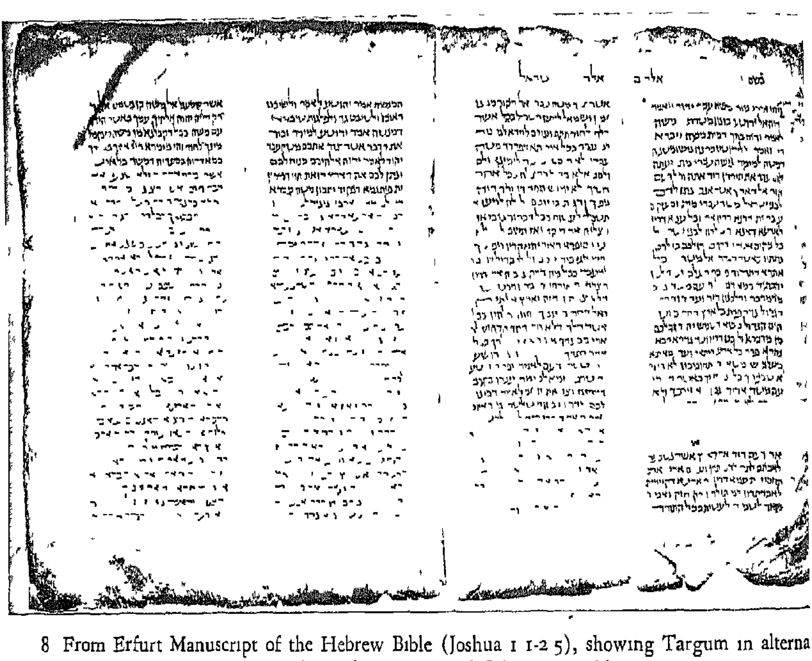
5 Leningrad Hebrew Codex A D 916 Isaiah 14 31-16 3



6 Complutensian Polyglot, 1514-17, Hebrew, Vulgate, Septuagint with interlinear Latin translation, Targum with Latin translation Genesis 1 1-12



7 First American edition of the Hebrew Bible Philadelphia, 1814



8 From Erfurt Manuscript of the Hebrew Bible (Joshua 1 1-2 5), showing Targum in alterna verses Formerly property of Johann Reuchlin


בראשית

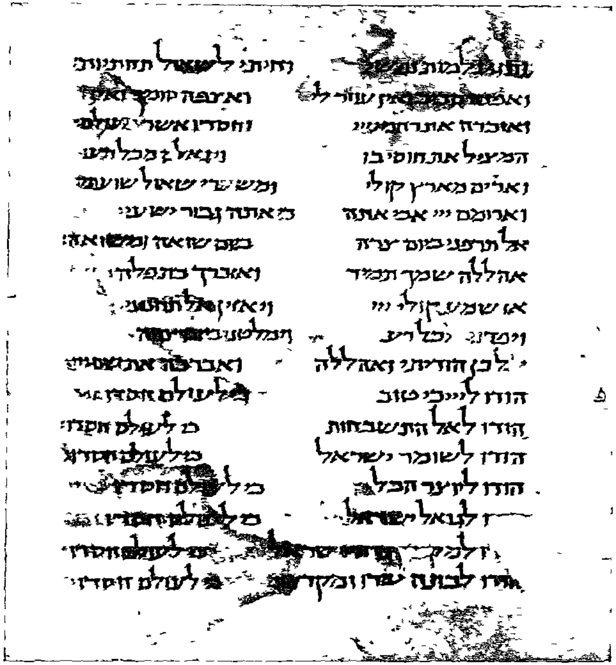
אמר

בְּרֵאשִׁית בָּרָא אֱלֹהִים אֵת הַשָּׁמַיִם וְאֵת הָאָרֶץ

בקדמין ברא יי ית שמיא וית ארעא

חכמינו

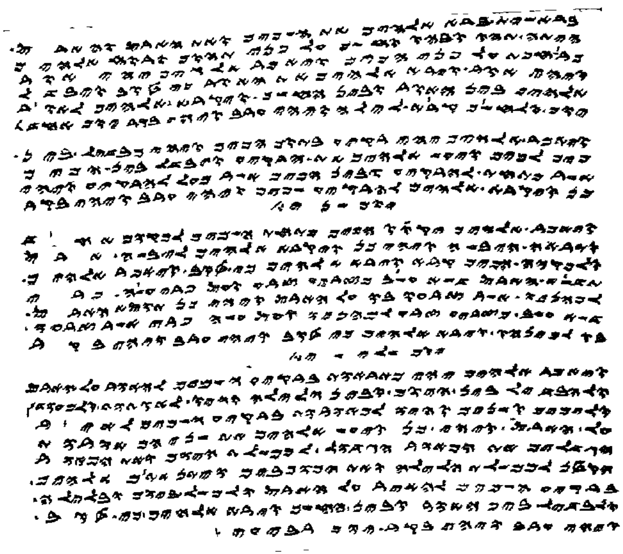
9 Genesis 1 1 in the Jacob ben Chayim Bible, with Targum of Onkelos accompanying the Hebrew text



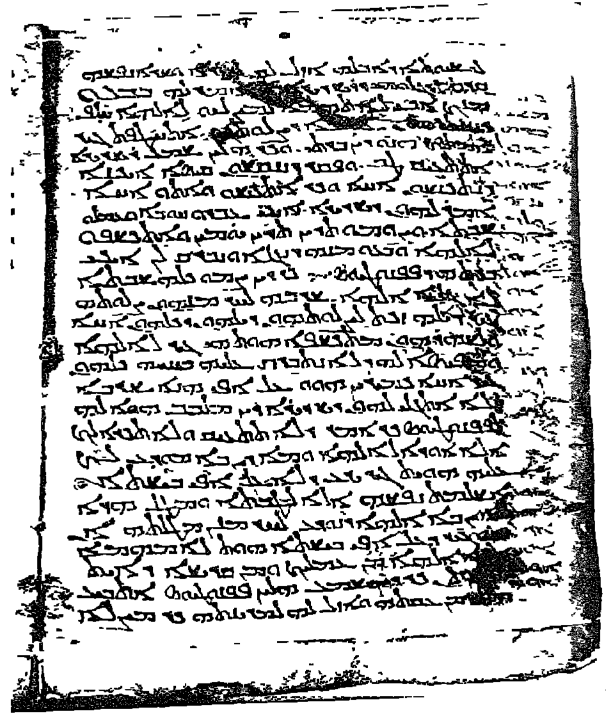
10 Hebrew fragment of Ecclesiasticus Taylor-Schechter collection of the University Library, Cambridge, England Ecclesiasticus 51 6c-12



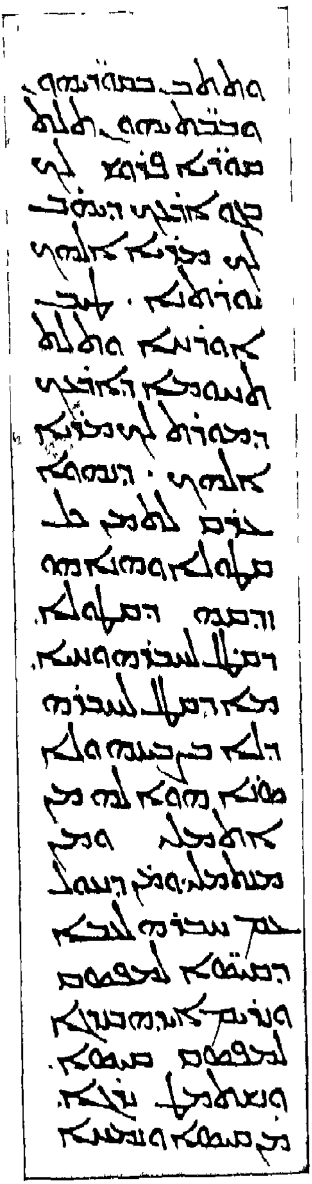
11 Jacob ben Aaron, notable high priest of the Samaritans at Nablus (about 1909), with Pentateuch roll



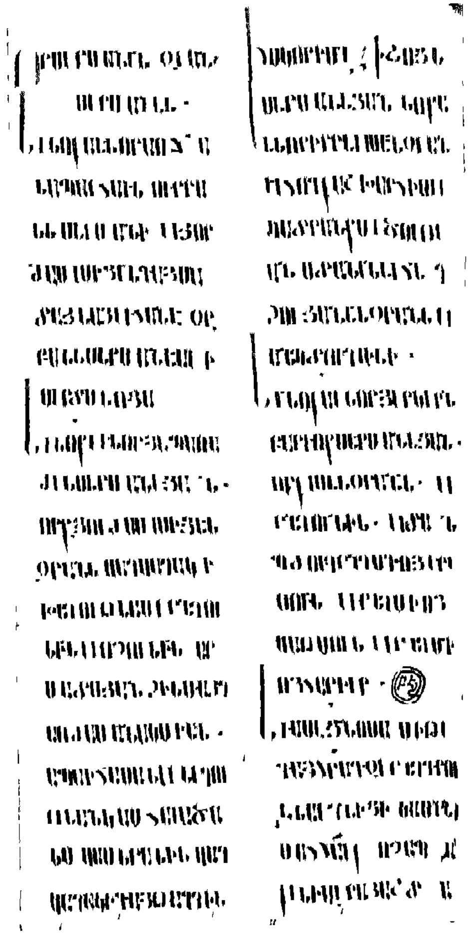
12 The Samaritan Pentateuch the beginning of Genesis 1



13 Codex of the Old Syriac Gospels over which was written in A D 778 a narrative of the Holy Women Found at Convent of St Catharine in 1892 Matthew 1 1-17a



14 Syriac Peshitta text Deuteronomy 19 2-5

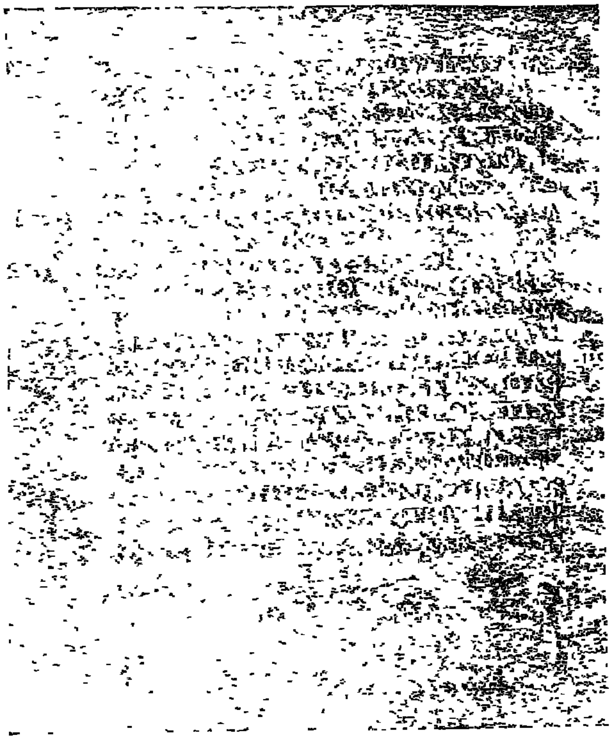


15. Gregory Armenian Manuscript of Gospels (Matthew and Mark) at University of Chicago Mark 4 14-21

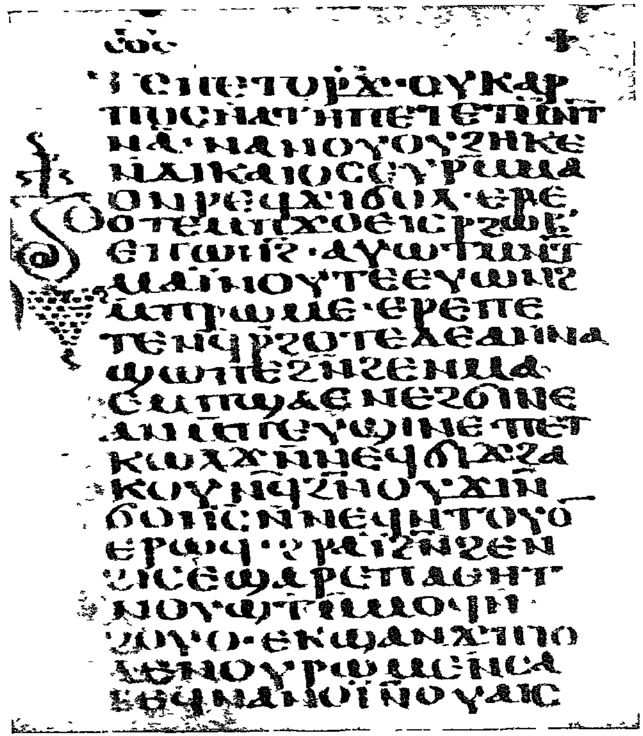
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ዴ፡ ዴ ቢሆሙ፡ መዕፈር
11 ቶሙ። ወይክወ፡ ናሆሙ፡
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10 ወታቀርብ፡ ላህመ፡ ኀበ፡
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12 ዘመርጡር። ወተሐርዶ፡
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15 አት፡ ውእቱ። ወትነሥእ፡
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16 ወተሐርዶ፡ ለውእቱ፡

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21 ማን። ወንሣእ፡ እምው
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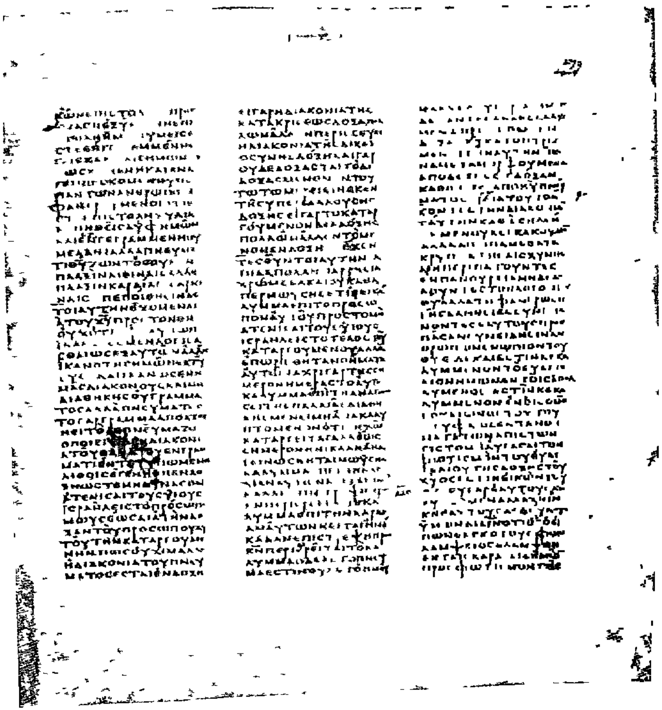
16 Ethiopic text Exodus 29 9-21



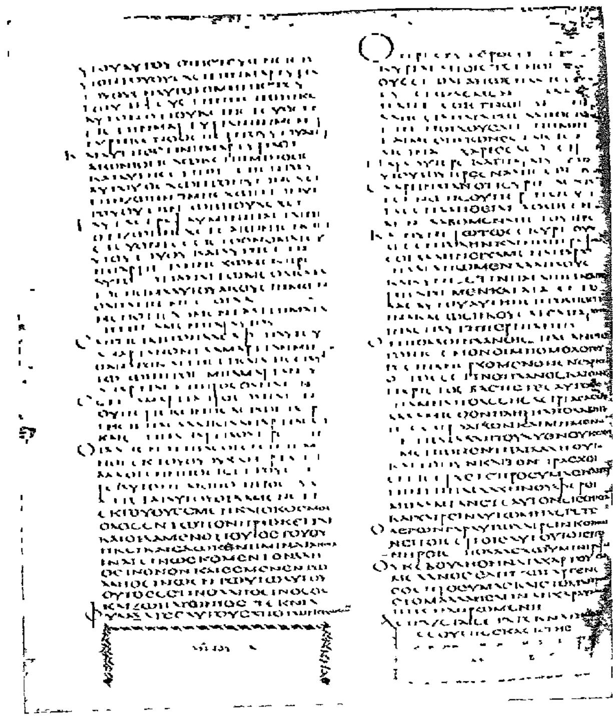
17 Gothic Gospels Codex Argenteus (Uppsala) Fifth or sixth century Mark 7 3-7



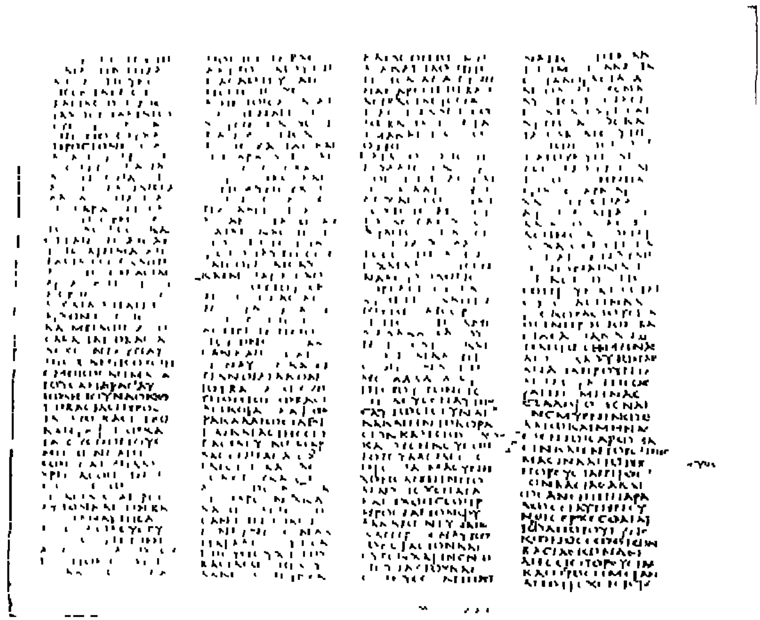
18 The Coptic Bible· a page from the *Book of Proverbs* (19 21-25)



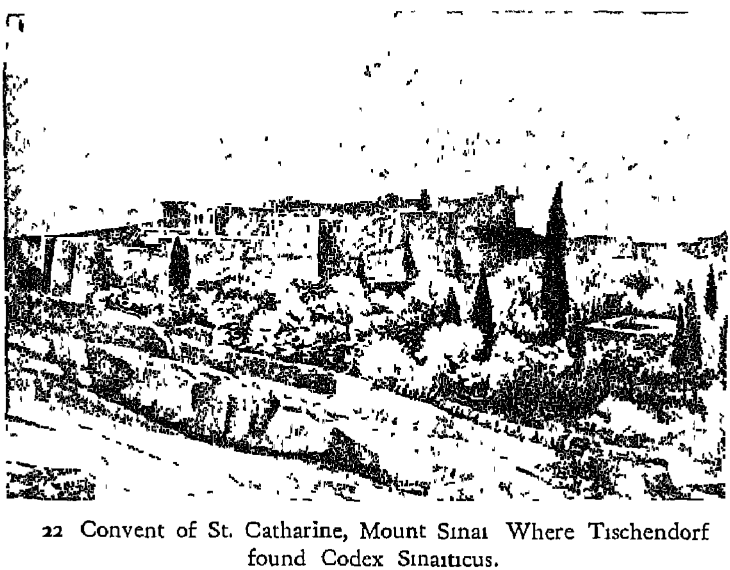
19 Codex Vaticanus (B) Fourth century II Corinthians 5 1-4 b



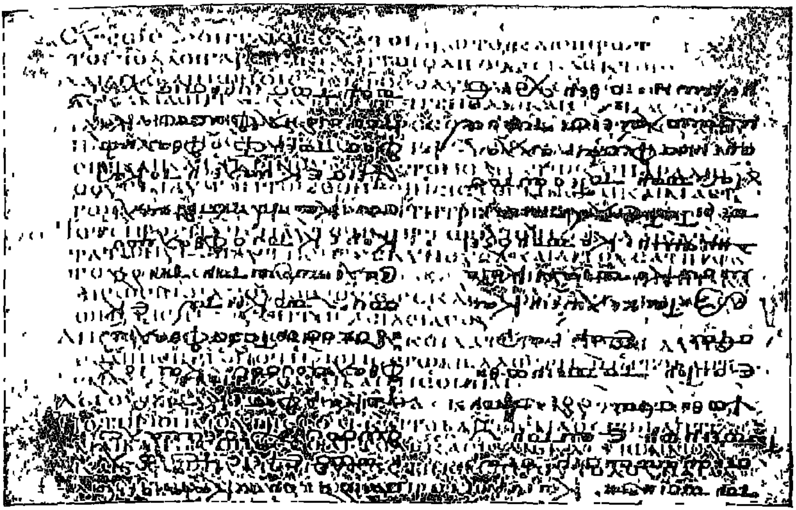
20 Codex Alexandrinus (A) Fifth century I John 5.9 to II John 13



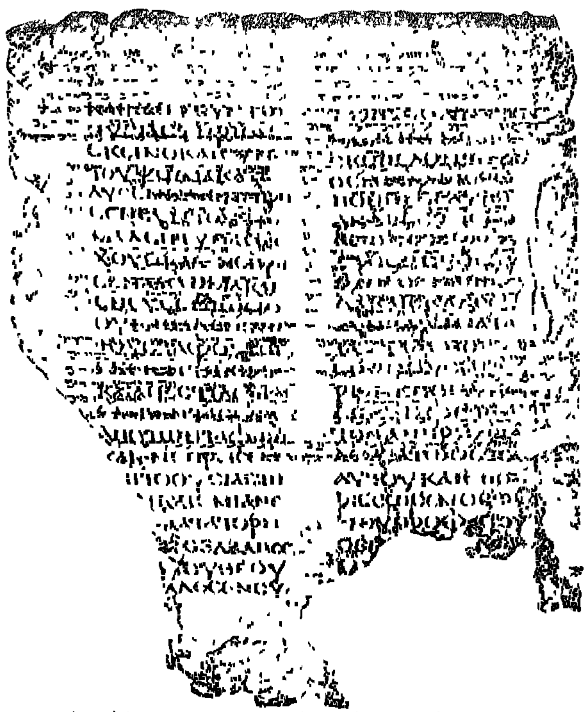
21 Codex Sinaiticus (S). Fourth century. Esther 1.15-2.14



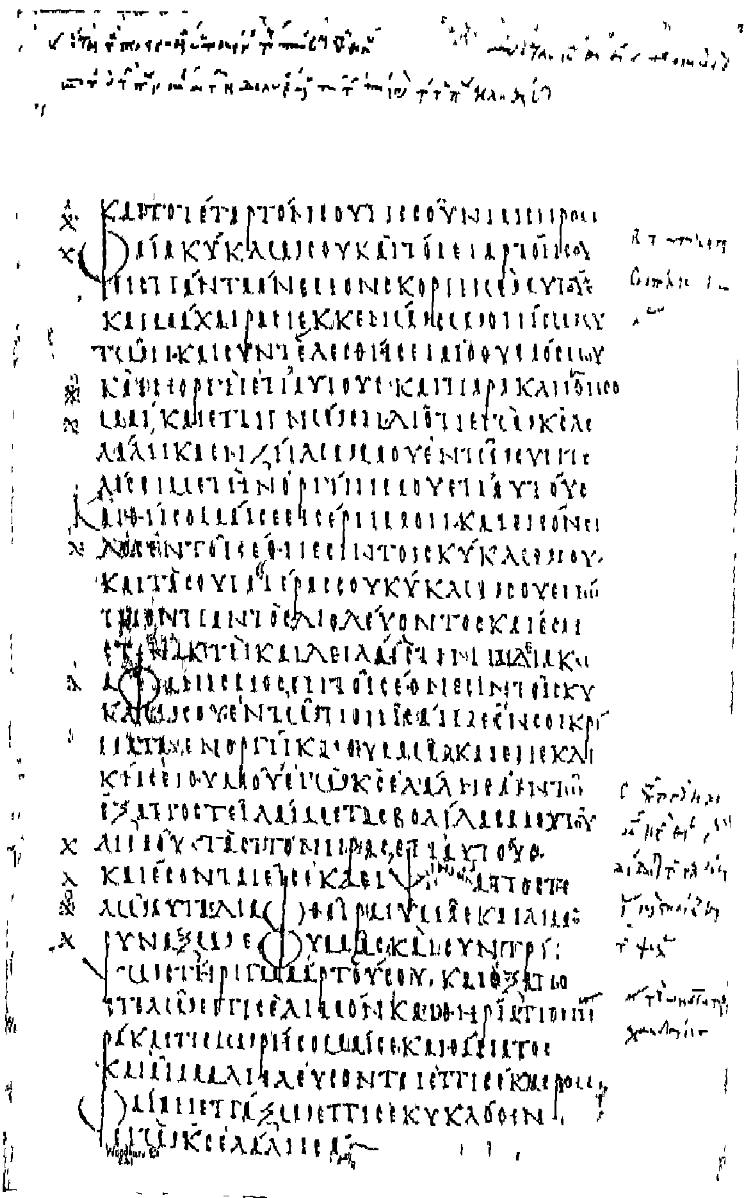
22 Convent of St. Catharine, Mount Sinai Where Tischendorf found Codex Sinaiticus.



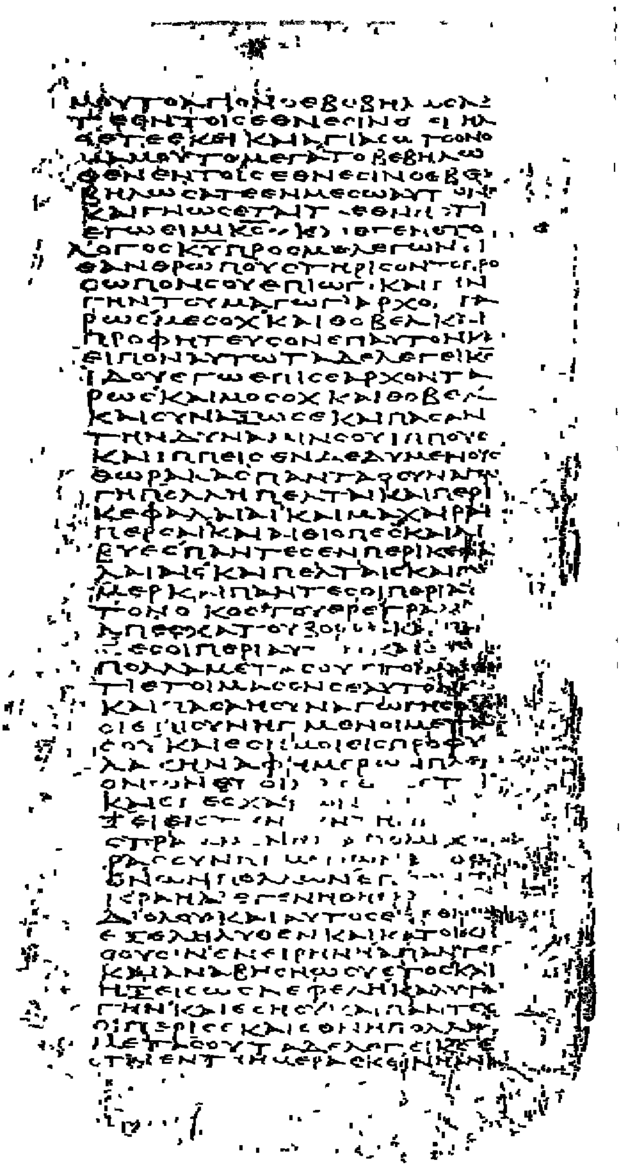
23 Greek Bible Codex Ephraem Fifth century A palimpsest—Greek written over the Greek in the twelfth century Matthew 20·16-23



24 Aquila's version of Greek Bible A palimpsest with Hebrew written over the Greek II Kings 23 15-19



25 Codex Marchalianus (Q) Sixth century Ezekiel 5 12 17



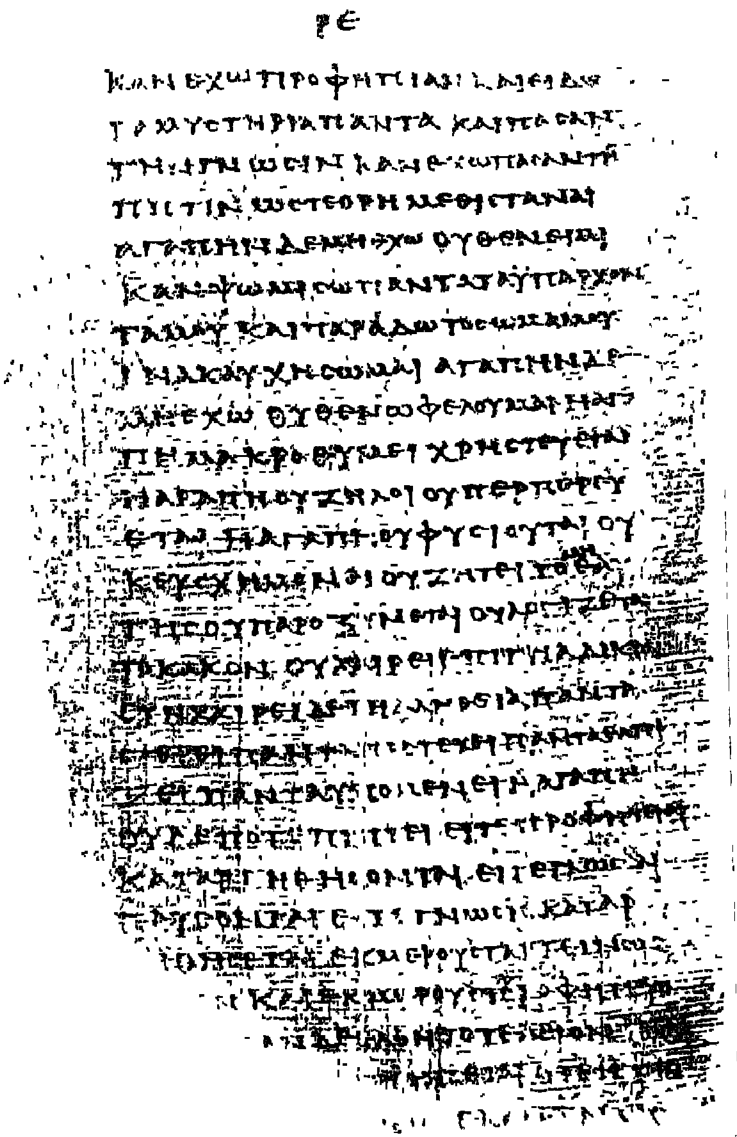
26 A page from the John H Scheide Biblical Papyri Ezekiel (edited by Johnson, Gehman, and Kase) Ezekiel 36 22-23, 38 1-10 (By permission of Princeton University Press)



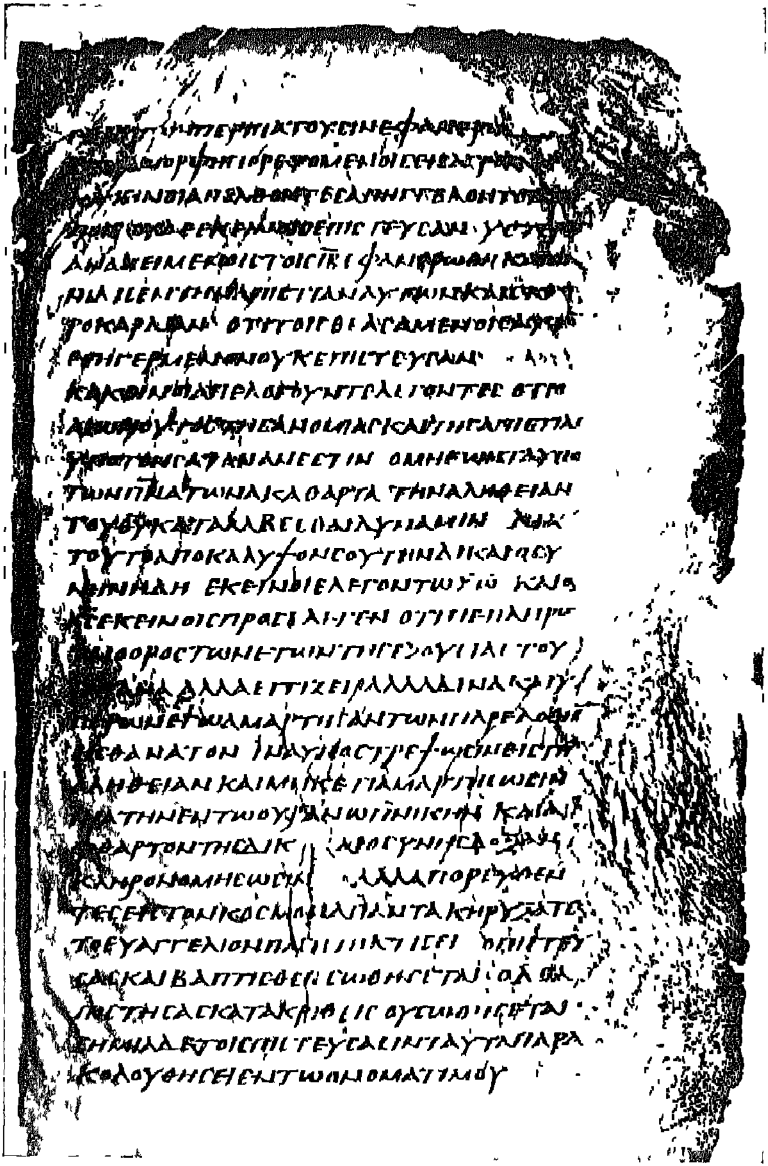
27 Bishop B F Westcott.



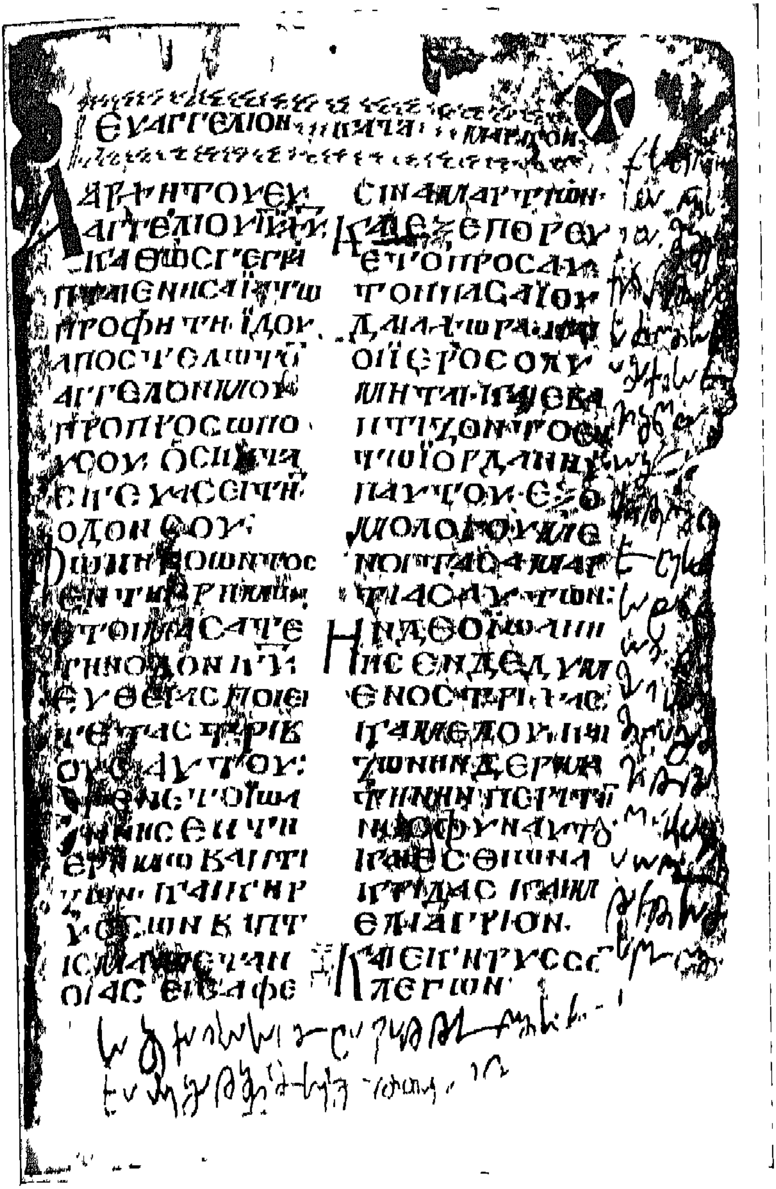
28 Fenton John Anthony Hort



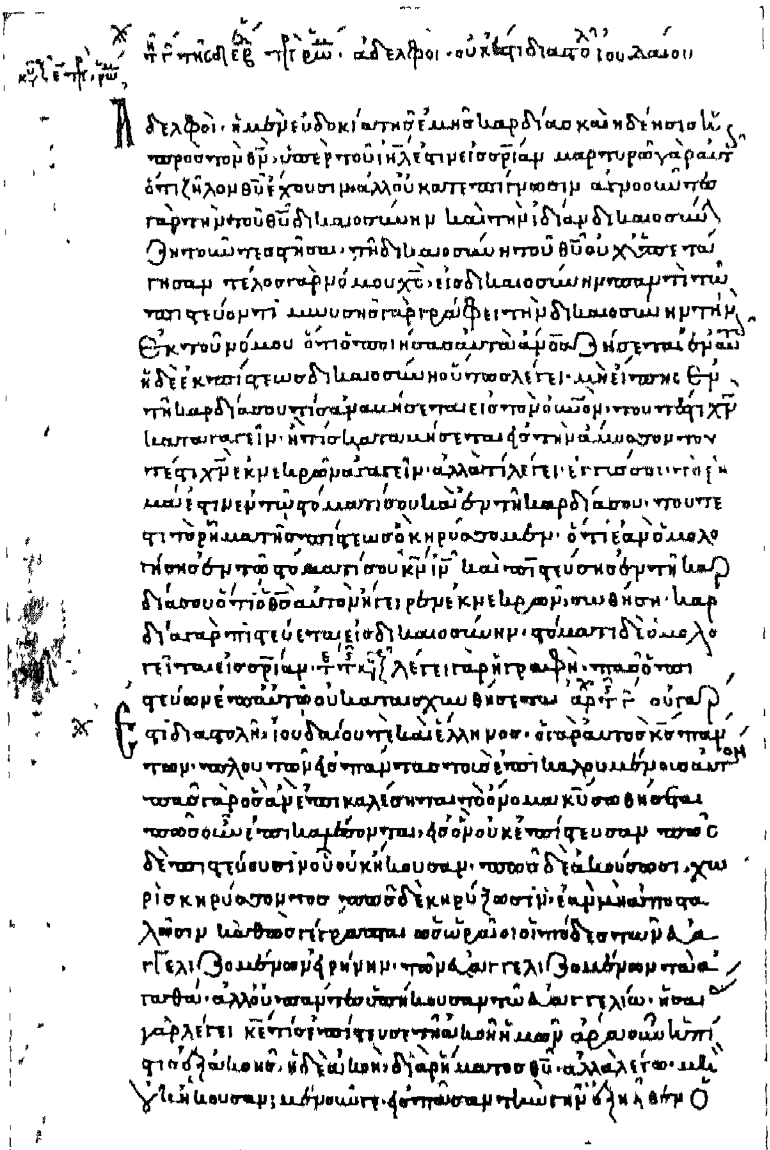
29 From the Chester Beatty Biblical Papyri Pauline Epistles I Corinthians 13 2-11 (By permission of Mr A Chester Beatty)



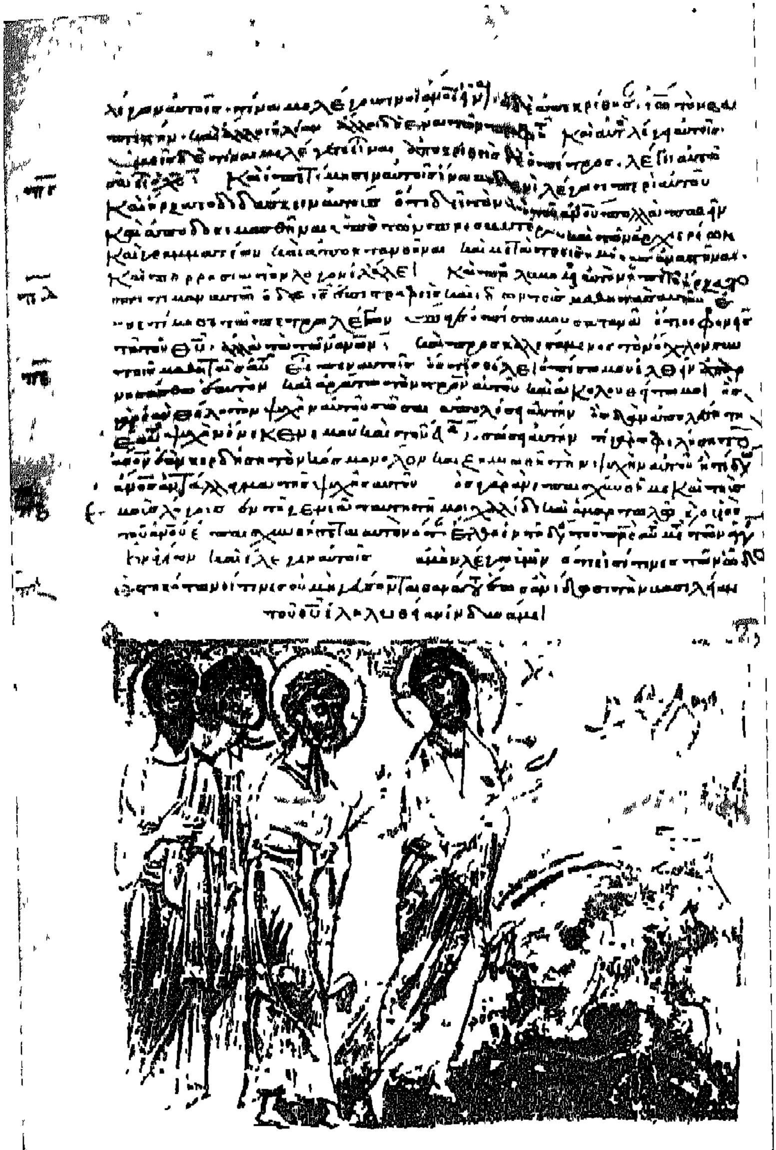
30 Facsimile of the Washington Manuscript of the Four Gospels in the Freer Collection Fourth or fifth century Mark 16 12-17 (By permission of the University of Michigan Press)



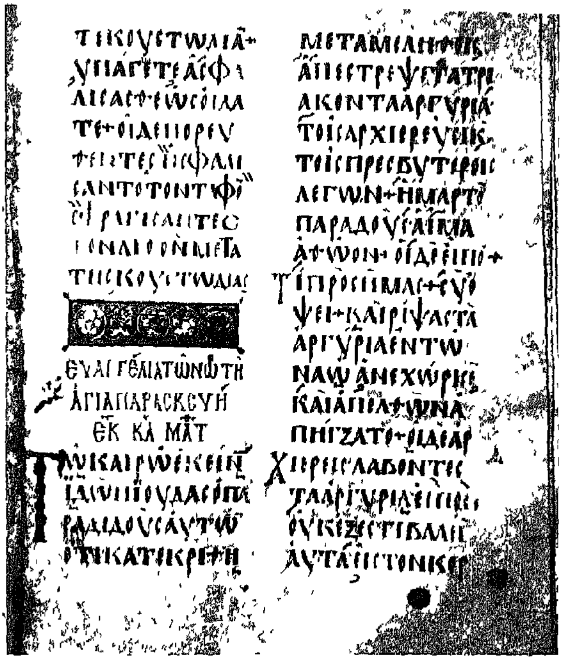
31 Koridethi Gospels (θ) Ninth century Mark 1 1-6



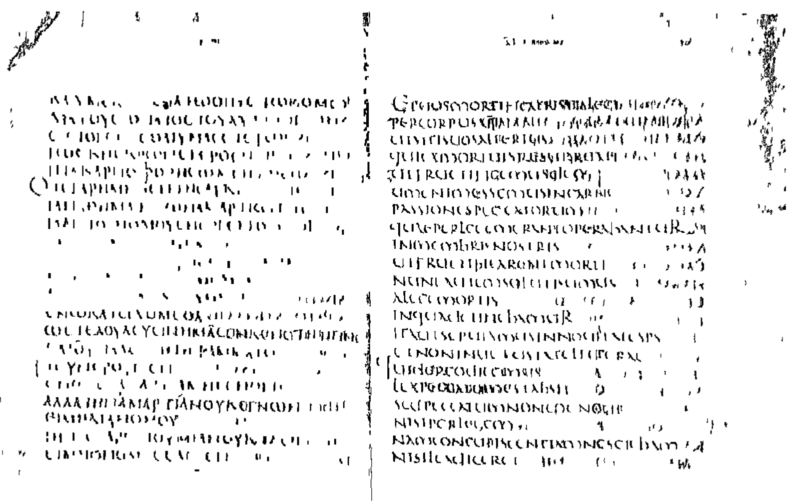
32 From "Price Praxapostolos" Twelfth century Codex 2412 (University of Chicago) Romans 10 1-18a



33 Codex 2400 (Rockefeller-McCormick New Testament [University of Chicago]) Mark 8 27b-9 1



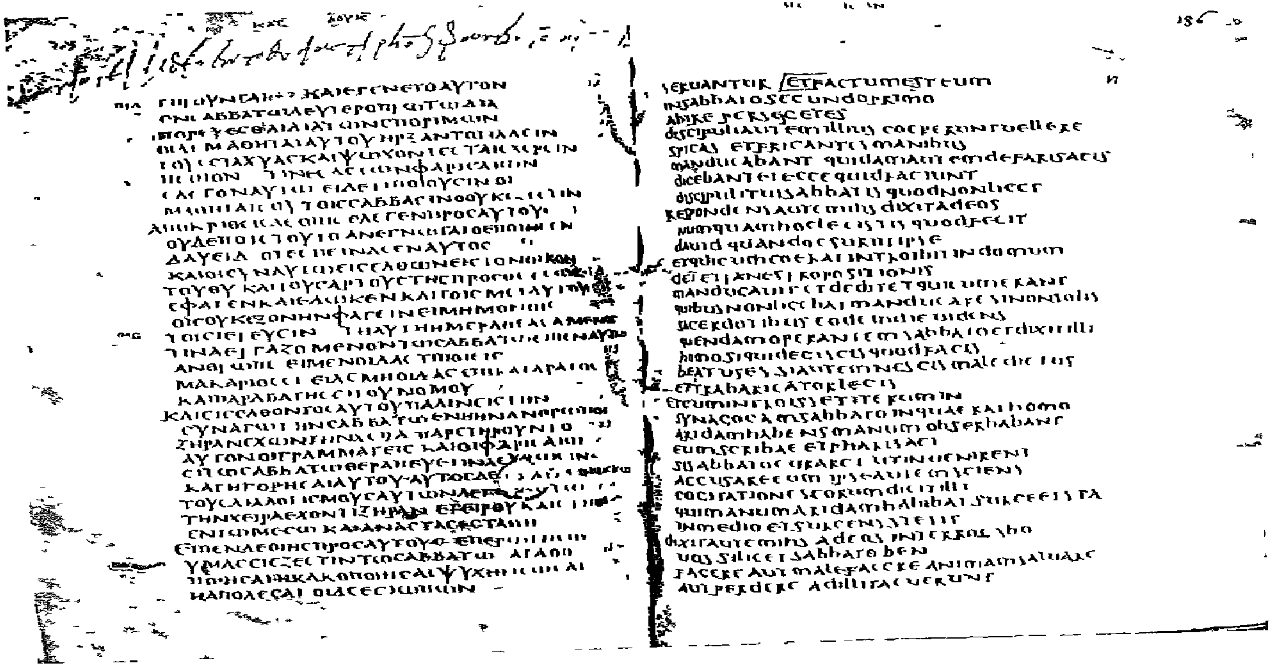
34 The Argos Lectionary, a tenth century Gospel lesson book in uncials discovered in Chicago. (Gregory-von Dobschütz 1599)



Greek

Latin

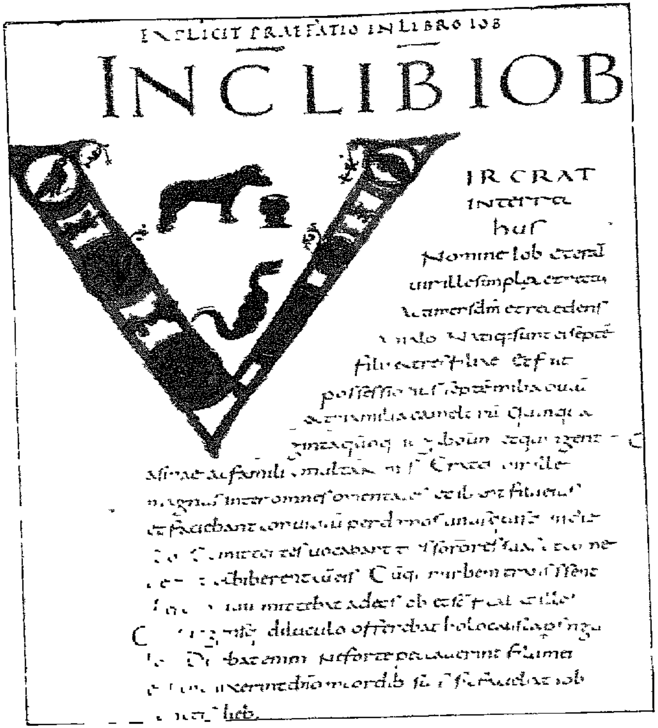
35 Codex Claromontanus (D_2, d) Fourth or fifth century Romans 7 4-7



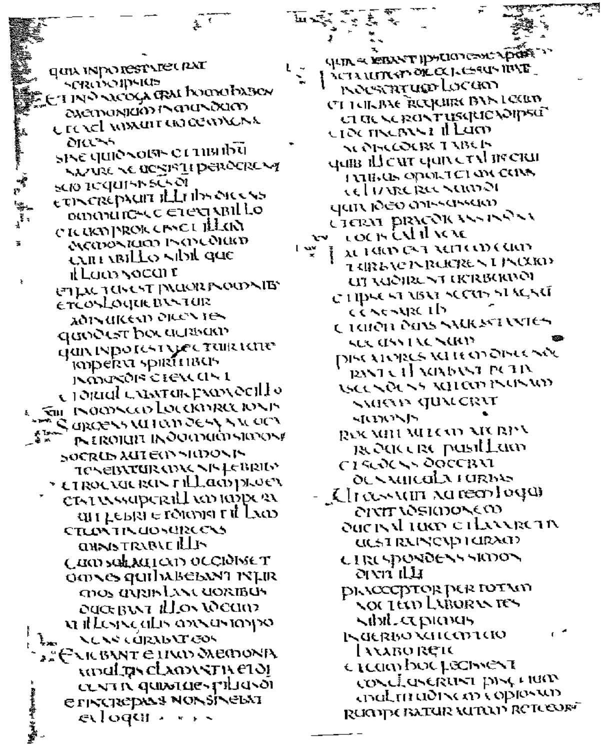
Greek

Latin

36 Codex Bezae (D) Fifth or sixth century Luke 6 1-9



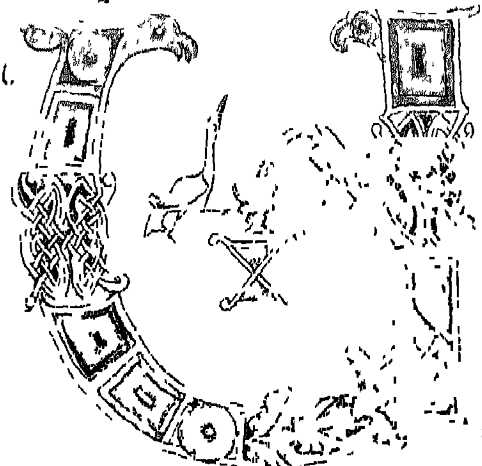
37 Jerome's version, the Latin Vulgate About A D 840 Job 1 1-8a.



38 Codex Amiatinus Seventh century Leading manuscript of the Vulgate Luke 4 32b-5 6

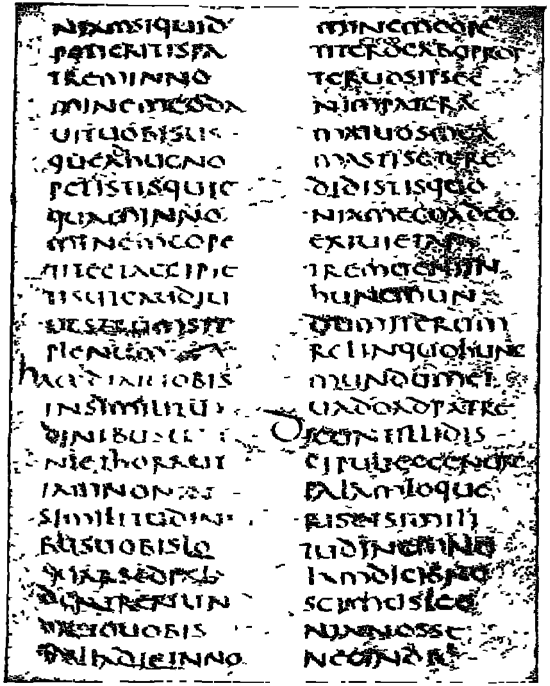
INCIPIT LIBER
ISAIAE · PRO
PHETAE ·

Cap. I.

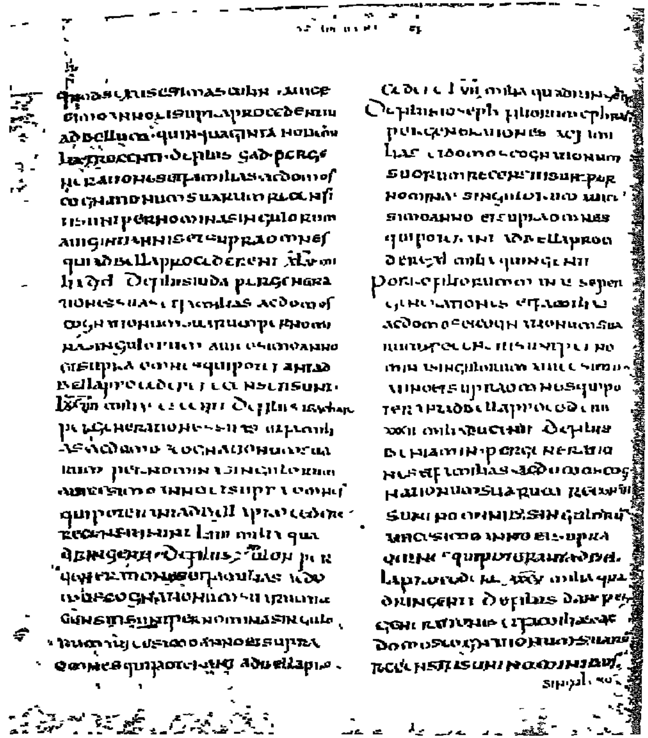


ISIO ISA
IAE FILII
AMOS
QUAM UI
DIT SUP
IUDAM
ET HIERU
SALEM IN
DIEBUS O
ZIAE IOATHAN
achaz ezechiae regum iuda. Audite caeli
et auribus percipite terra quoniam dominus locutus
est filios enutriui et exaltaui ipsi autem
spreuerunt me. Cognouit bos possessorem
suum et asinus praesepe domini sui. israhel
non cognouit me populus meus non intelle
xit. Uae genti peccatrici populo graui ini
quitate semini nequam filiis sceleratis

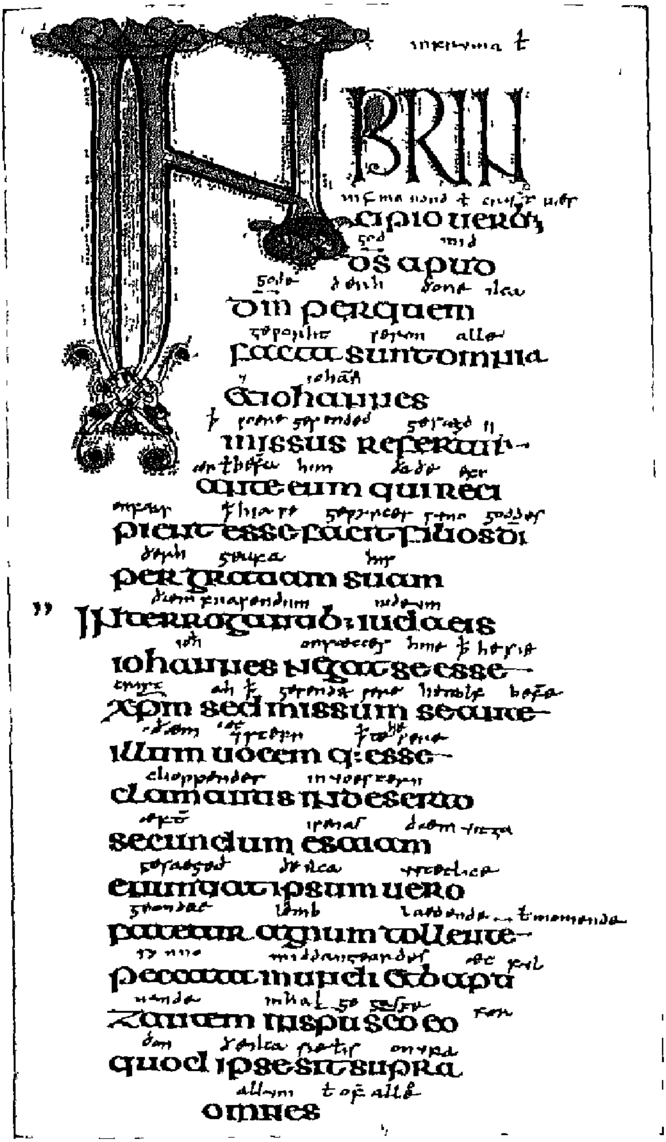
39. Alcuin's revision of Vulgate, A D 801 Isaiah I 1-4a



40 Old Latin Gospels Codex Vercellensis
Late fourth century John 16 23-30



41 Vulgate manuscript formerly in Earl of Ashburnham's library. Seventh century Numbers 1 22b-38a



42 Cotton Manuscript Seventh century, and interlinear Anglo-Saxon paraphrase of about A D 950 A summary prefixed to the Gospel of John



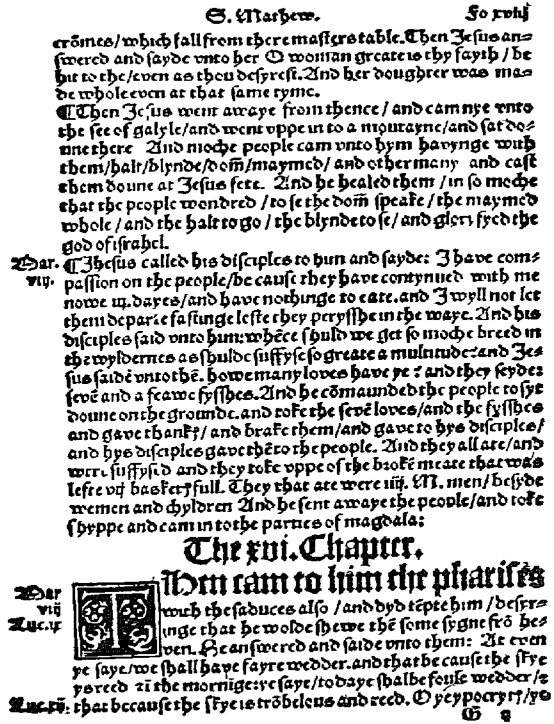
43 John Wycliffe.



44 Wycliffe's Bible, before 1397 Introduction to Isaiah and part of Chapter 11.



45 William Tyndale.



S. Mathew. Fo. xviii.

cromes/which fall from there masters table. Then Jesus answered and sayde unto her O woman greate is thy fayth / be hit to the/even as thou desyrest. And her doughter was made whole even at that same tyme.

¶ Then Jesus went awaye from thence / and cam nye unto the see of galyle/and went uppe in to a moutayne/and sat doune there And moche people cam unto hym havynge with them/halt/blynde/dom/maymed/ and other many and cast them doune at Jesus fete. And he healed them / in so moche that the people wondred / to se the dom speake / the maymed whole / and the halt to go / the blynde to se/ and glorifyed the god of israhel.

Mar. viii. ¶ Jhesus called his disciples to him and sayde: I have compassion on the people/be cause they have contynued with me nowe iii. dayes/and have nothinge to eate. and I wyll not let them departe fastinge leste they perysshe in the waye. And his disciples said unto him: whece shuld we get so moche breed in the wyldernes as shulde suffyse so greate a multitude: and Jesus saide unto thẽ. how many loves have ye? and they seyde: seve and a feawe fysshes. And he cõmaunded the people to syt doune on the grounde. and toke the seve loves/and the fysshes and gave thanks/ and brake them/and gave to hys disciples/ and hys disciples gave thẽ to the people. And they all ate/and were suffysed and they toke uppe of the broke meate that was lefte vii baskets full. They that ate were iiii. M. men/ besyde wemen and chyldren And he sent awaye the people/and toke shyppe and cam in to the parties of magdala:

The xvi. Chapter.

Mar. viii. Luc. xi. Then cam to him the pharises with the saduces also / and dyd tẽpte him / desyringe that he wolde shewe thẽ some sygne frõ heven. He answered and saide unto them: At even ye saye/we shall have fayre wedder. and that be cause the skye ys reed: and in the morninge ye saye/to daye shalbe foule wedder/& that because the skye is trõbelous and reed. O ye ypocrytes/ye

G. ii.

46 Tyndale's New Testament AD 1525 Matthew 15 27-16.3.



47 Myles Coverdale

The XI. Chapter.

A Sende thy vytayles ouer the waters,
and so shalt thou fynde thē after ma
ny yeares. Geue it awaye amonge se
uen or eight, for thou knowest not what mise
ry shal come vpō earth. Whē the cloudes are
full, they poure out rayne vpon the earth.
And whē ẏ tre falleth, (whether it be towar
de the south or north) in what place so euer it
fall, there it lyeth. He that regardeth ẏ wyn
de, shal not sowe: and he that hath respecte
vnto the cloudes, shal not reape. Now like
as thou knowest not the waye of the wyn-
de, ner how ẏ bones are fylled in a mothers
wombe: Euen so thou knowest not the wor
kes of God, which is the workemaster of all.
B Cease not thou therfore with thy han-
des to sowe thy sede, whether it be in ẏ mor
nynge or in the euenynge: for thou knowest
not whether this or that shall prospere, & yf
they both take, it is the better. The light is
swete, & a pleasaunt thinge is it for the eyes
to loke vpon the Sonne. If a man lyue ma-
ny yeares, and be glad in them all, let him re
membre the dayes of darcknesse, which shal
be many: & when they come, all thinges shal
be but vanite. Be glad then (O thou yonge
man) in thy youth, and let thine hert be me-
ry in thy yonge dayes: folowe the wayes of
thine owne hert, and the lust of thine eyes:
but be thou sure, that God shal bringe the in
to iudgment for all these thinges.

48 Coverdale's Bible A D 1535 Ecclesiastes 11 1-9.

¶ The.xx.Chapter.

Hezekia is sycke, & receaueth the sygne of his health. He receaueth rewardes of Berodach, & is reprehended of Isay because he shewed hym the treasure. He dyeth and Manasseh his sonne raygneth in his steade.

A ABoute that tyme was Heze=
kia sycke vnto the deeth. And
the prophete Isay the sonne of
Amoz came to him, and sayde
vnto hi. Thus sayth ẏ Lorde.
+ put thyne houssholde in an
ordre, for thou shalt dye, and not lyue. And
Hezekia turned his face to ẏ wall, & prayed
vnto the Lorde, sayeng: I beseche the now,
O Lord, remembre how I haue walked be=
fore the in trueth and with a perfecte herte, &
haue done that which is good in thy syght,
and Hezekia wepte sore.
And it fortuned that + afore Isay was
gone out into ẏ myddle of ẏ courte, ẏ worde
of ẏ Lord came to hi, sayeng turne agayne,
and tell Hezekia the captayne of my people:
Thus sayth the Lord God of Dauid thy fa=
B ther. I haue herd thy prayer, & sene thy tea=
res. And beholde, I will heale the, so that on
the thirde daye ẏ shalt go vp into the house
of ẏ Lord. And I will adde vnto thy dayes
yet fyftene yeare, and will delyuer the & this
cytie out of the hand of the kynge of Assy=
ria, & wyll defende this citie for myne awne
sake, & for Dauid my seruauntes sake. And

49 The Great Bible A D 1539 II Kings
20 1-7

1 PAul an Apostle (not of
men, nether by [b] mā, but
by IESVS CHRIST,
and God the Father ẇ
hathe raised him from
the dead)
2 And all the brethren ẇ
are with me, vnto ẏ Churches of Galatia.
3 Grace *be* with you and peace from God
the Father, & *from* our Lord Iesus Christ,
4 Which gaue him self for our sinnes, that
he might deliuer vs [*] from this [c] present
euil worlde according to the wil of God
euen our Father,
5 To whome *be* glorie for euer and euer,
Amen.
6 I marueile that ye are so sone remoued a-
way vnto another "Gospel, from him that
had called you in the [d] grace of Christ,
7 Which is not another *Gospel*, saue ẏ there
be some which trouble you, and intende to
[e] peruert the Gospel of Christ
8 But thogh that we, or an [f] Angel from
heauen preache vnto you otherwise, thē
that which we haue preached vnto you, let
him be accursed.
9 As we said before, so say I now againe, If
anie man preache vnto you otherwise, thē
ẏ ye haue receiued, let him be accursed.

50 The Geneva Bible A D. 1560
Galatians 1 1-9

3 *A voyce crieth in wildernesse: Prepare
the way of the Lorde, make straight
the path of our God in the desert.
4 All valleys shalbe exalted, and euery
mountayne and hyll layde lowe: what
so is croked shalbe made straight, and
the rough shalbe made playne.
5 *For the glorie of the Lorde shall ap=
peare, for all fleshe shall at once see that
the mouth of the Lorde hath spoken it.
6 The same voyce spake: Nowe crye.
And the prophete aunswered, what
shall I crye? *That all fleshe is grasse,
and that all the goodlinesse therof is as
the floure of the fielde.
7 The grasse is withered, the floure
B falleth away, for the breath of the Lord
bloweth vpon them: of a trueth the
people are grasse.
8 The grasse withereth, and the floure
fadeth away: *yet the worde of our
God endureth for euer.
9 Go vp vnto the hye hyll O Sion thou
that bryngest good tidynges, lyft vp thy
voyce with power O thou preacher
Hierusalem, lyft vp without feare, & say
vnto the cities of Iuda: Beholde your
God,

51. The Bishops' Bible A D. 1568 Isaiah
40 3-9

CHA. XIII. OF THE APOSTLES. 327

1 AND there vvere in the Church vvhich
vvas at Antioche, Prophets and Doctors,
among vvhom vvas Barnabas, & Simon
that vvas called Niger, and Lucius of Cy-
réne, and Manahen vvho vvas the foſter-
brother of Herod the Tetrarch, and Saul.
2 † And ᶜ as they vvere ″ miniſtring to our
Lord, and faſting, the holy Ghoſt ſaid : ″ Separate me Saul and
Barnabas vnto the vvorke, vvhereto I haue taken them.
3 † Then they ″ faſting and praying, and ″ impoſing hands vpō
them, dimiſſed them.
4 † And they being ″ ſent of the holy Ghoſt, vvent to Se-
5 leucia, and thence ſailed to Cypres. † And vvhen they vvere
come to Salamîna, they preached the vvord of God in the
ſynagogs of the Ievves. And they had Iohn alſo in their mi-
6 niſterie. † And vvhen they had vvalked through out the

λειτουρ-
γούντων
αὐτῶν

52 The Rheims New Testament A D 1582 Acts 13.1-6.

AND I ſawe when the
Lambe opened one of the
ſeales, and I heard as it
were the noiſe of thunder,
one of the foure beaſtes,
ſaying, Come and ſee.
2 And I ſaw, and behold, a white
horſe, and hee that ſate on him had a
bowe, and a crowne was giuen vnto
him, and hee went foorth conquering,
and to conquere.
3 And when hee had opened the ſe-
cond ſeale, I heard the ſecond beaſt ſay,
Come and ſee.
4 And there went out another
horſe that was red: and power was
giuen to him that ſate thereon to take
peace from the earth, and that they
ſhould kill one another: and there was
giuen vnto him a great ſword.
5 And when hee had opened the
third ſeale, I heard the third beaſt ſay,
Come and ſee. And I beheld, and loe,
a blacke horſe: and hee that ſate on him
had a paire of balances in his hand.

53 King James, or the Authorized Ver-
sion A D 1611 Revelation 6 1-5.

etc.) A special relationship also seems to exist with the marginal readings of the Harclean Syriac and with the African Old Latin

Lectionaries, both uncial and cursive, generally have been neglected in attempts to reconstruct the history of the text or critical editions of it. This was at first a part of the neglect of the later minuscule manuscripts and due to the belief that the lectionary text was of late Byzantine character and of little value. Slight changes made at the beginnings of lections to make them liturgically usable probably also created the erroneous impression of general inaccuracy While, therefore, a few scholars appreciated their worth, e g., Scrivener and Gregory, the beginning of their adequate evaluation and study really dates within the last two decades, especially with the publication at Chicago of *Prolegomena to the Study of the Lectionary Text of the Gospels,* edited by Professors Riddle and Colwell in 1933. These and subsequent studies indicated among other things that the texts of lectionaries varied by lections and must be so studied, and that an early text was often preserved in them. The text of the individual lection is the basic unit for comparison rather than a total manuscript, except as the earlier uncials may not have suffered as much assimilation to the current Byzantine readings as the later copies. On the other hand, lectionary readings often influenced the text of non-lectionary manuscripts, an outstanding example being the location of the passage John 7.53-8.11 after Luke 21:38 in the Ferrar group. In lieu of a critical text of the lectionaries, the Patriarchate edition of the Eastern Orthodox church, based upon some sixty documents, is only a fair representative. It is often corrected to the Byzantine standard, and where church lessons are not found, as especially in Acts and Revelation, it gives the Byzantine text.

Finally, some attention should be given to the interesting form of semi-symbolic Byzantine illumination which occurs often in Greek manuscripts. Ornamentation and embellishment of the codices consisted of stamped and decorated covers, of decorative headpieces, canon tables and initial letters, of author portraits and text illustrations. These arts flourished especially in the later or minuscule period, and evangelist portraits were of the most common occurrence. The illumination was multicolored, the most vivid hues being found in the period of the eleventh to thirteenth centuries Of the uncial period we have already

mentioned the earliest (sixth-century) important New Testament example in the purple parchments, Codices Rossanensis and Sinopensis

The most extensively illustrated Greek manuscripts known are the Gospel Codices 187 (Laurentian VI. 23) and 269 (Paris 74), both of the eleventh or twelfth century. The latter, in the Bibliothèque Nationale, has 375 miniatures besides Evangelist portraits, and the Laurenziana Library manuscript of Florence has 288. The most highly illustrated Greek New Testament (lacking only Revelation) is the Rockefeller-McCormick New Testament (Codex 2400), named after the late Mrs. Edith Rockefeller McCormick, who purchased it from a Paris dealer after its discovery there by Professor Goodspeed in the summer of 1927. Written probably in Constantinople in the scriptorium of the Byzantine Emperor Michael Paleologus (A.D 1261-82), it preserves 98 of an original 124 miniatures, 15 of which are without parallel in known East Christian art The profuse illumination, the silver-plated covers, and the general sumptuousness of the volume lead to the belief that it was made for the court of the Emperor himself. Richly illuminated manuscripts were apparently thus prepared for royalty. Codex 38 (Paris, B N, Coislin 200), written by the same scribe as Codex 2400 and in its 14 miniatures iconographically related to it, was prepared as a gift for Louis IX of the Western Empire The present covers of Paris 74, dated 1603, have upon them the arms of France and Navarre and the figure of King Henry V.

Mrs. McCormick kindly loaned her manuscript to the University of Chicago where it was studied in the Department of New Testament and Early Christian Literature and published with detailed attention to its text and iconography by Professors Goodspeed, Riddle, and Willoughby. The miniatures were all beautifully reproduced in full color. The text of the codex was not found to be of unusual significance, except in Paul, where from Romans 10 and on it had many Alexandrian and Western readings and was closely related in Professor Riddle's judgment to a twelfth-century manuscript, Codex 330. In the Gospels it also preserved several early non-Byzantine variants, in Mark often of Caesarean quality.

Two other iconographically significant manuscripts were studied and published at Chicago by Professors Willoughby and Colwell

soon after this. One of these, published in 1937, was the "Karahissar Gospels," a Leningrad codex (No. 105; Gregory 574) of the thirteenth century containing 65 miniatures related to those of Codex 2400 and to a group of similarly illuminated codices. The other, published in 1940, was the "Elizabeth Day-McCormick Apocalypse," a seventeenth-century manuscript purchased by Miss McCormick in Paris in 1932 and donated to the University of Chicago. It contains the text of Revelation in modern Greek, with the Commentary of Maximos the Peloponnesian and a unique cycle of 69 text illustrations.

We cannot, of course, even list here the many significant publications and iconographic studies of the Greek documents, not to mention those of the versions or the related materials to be found in the murals, frescoes, and mosaics of catacombs and cathedrals. In this area the Princeton Index of Christian Art, under the general direction of Professor A. M Friend, is one of the most inclusive and effective instruments of humanistic research. Two important, related projects are the Princeton Corpus of Septuagint Illustrations and, under the direction of Professor H. R. Willoughby, the Chicago Corpus of New Testament Illustrations.

We have called attention to the publications of several important individual manuscripts. There are also various published collections of facsimile leaves for manuscript and paleographic study. Professor W. H. P. Hatch, for example, published in this manner the Greek manuscripts at Mount Sinai (1932) and Jerusalem (1934), as well as a collection representing the principal uncial manuscripts of the New Testament (1939); and in 1951 he also brought out a volume illustrative of the minuscules. F. G. Kenyon published facsimiles of the manuscripts in the British Museum (1900), H. Omont of those in the Bibliothèque Nationale, Paris (1887-92). The Paleographical Society and New Paleographical Society of London made available much material of this sort Professor and Mrs. Lake undertook to publish such facsimile leaves of all dated Greek manuscripts before 1200, and between 1934 and 1939 ten large folio volumes were issued by the American Academy of Arts and Sciences in Boston. Catalogues of various museums, libraries, and monasteries often include facsimiles

of their important documents. The modern methods of microfilming now have also brought many relatively inaccessible manuscripts as well as rare printed editions within the reach of scholars everywhere. The great bulk of manuscripts at Mt. Sinai and Jerusalem have been microfilmed, largely through the efforts of the Library of Congress, where the negative film is deposited. The extensive collection of the Vatican Library is likewise being reproduced, and will be housed in a specially constructed building at St. Louis University. The Beuron Latin material, consisting of some 500,000 items, has been microfilmed through Catholic-Protestant collaboration. The negative of this is at Notre Dame University, with copies at a few other Catholic institutions and in the files of the International New Testament Text Project (see page 220). A small beginning has been made with the rich treasures of Mt. Athos, and only the unfortunate lack of financial resources prevents its completion. Never have the materials for the study of the text of the New Testament been so numerous or so available.

CHAPTER XIII

The Old Latin and the Vulgate

THE two preceding chapters have treated the subject of the Greek manuscripts of the New Testament as the principal bases of our present-day Greek Testament. These do not exhaust our sources, as we have already seen in the various references to the church fathers. Very early in the history of the Christian church the New Testament was translated into the tongues of the peoples who inhabited and bordered on the Greek-speaking world As rapidly as Christianity pushed into these outer regions, the Gospel had to be presented in the language of its converts To do this most effectively it was translated from the Greek into the languages of several of the most influential peoples.

These several versions or translations furnish us only indirect evidence as to the readings of the original text. But the fact that some of them were made in the second century, almost two centuries back of the oldest complete Greek texts, gives them added value. They therefore stood nearly two hundred years closer to the autographs than Codex Vaticanus and were made, in fact, no more than a century, perhaps only a generation, after the penning of the latest New Testament books. They are thus an invaluable aid for the recovery of the earliest text of the New Testament. In order, then, to make proper use of them in textual work, one must retranslate them into Greek to see what the basis of their translation was

But difficulty faces the scholar who attempts this kind of work He must remember that these versions have been subject to the same kind of scribal errors and corruptions as those found in Greek and all other manuscripts. If now we had the first translation of each separate version from the Greek we should have a prize for determining the original Greek from which the translation was made. But we have neither this nor any manuscript of any of the versions reaching back

of the fourth century. Of several of the versions there is not as yet any reliable critical edition. Scholars must either make scant use of what we have, or at great pains produce a text that gives us a consensus of the best readings of all the best manuscripts.

The most valuable of the versions of the New Testament are the Latin, the Syriac, the Coptic, the Ethiopic, the Gothic, the Armenian, and the Georgian.

The Latin Bibles of the Old Testament were discussed somewhat in detail in Chapter V. We observed there that the Old Latin was a translation, for the Old Testament, from the Septuagint, while for the New it was made directly from the original Greek. Of the Old Testament, the Old Latin text exists only in fragments, but in the New Testament the text is substantially complete. The Vulgate of the New Testament is a revision of the Old Latin that was made by Jerome, one of the greatest Biblical scholars of the early church, who did his work near the close of the fourth century (see p 86).

From quotations in the writings of the Latin church fathers, such as Tertullian, Cyprian, Lucifer of Cagliari, Hilary of Poitiers, Ambrose, Jerome, Rufinus, Augustine, and Pelagius, the Old Latin New Testament can be almost entirely recovered. The prevalence of this version in the second century is unquestioned. It is one of the chief witnesses to the so-called Western type of text, but was often modified and corrected to bring it into harmony with some of the variant readings of the Greek manuscripts found in different provinces and dependencies of the Roman Empire. The resulting wide divergencies led to the revision of the Old Latin by Jerome in the latter part of the fourth century. As in the Old Testament, scholars have recognized three groups of texts. (1) African, (2) European, (3) Italian But the distinction of the last two is often questioned Julicher, for instance, preferred the two categories "Afra" and "Itala" (see below). The history of the origin and growth of these different families of texts is but imperfectly known They are classified and arranged largely on the basis of the quotations of the fathers Classification of some copies, however, is difficult or impossible because of mixture, especially with the Vulgate.

As the Vulgate superseded the Old Latin version, the latter lost its authority in the church. As a consequence the manuscripts of the

version fell into disuse, and in course of time largely vanished from sight Yet there are about fifty manuscripts and parts of manuscripts extant today. Some of them are so fragmentary as to be almost negligible. Of the Gospels there are listed about thirty, fragments and all; of the Acts nine, Catholic Epistles five, Pauline Epistles ten, and Apocalypse three. But since some of these different groups are contained within the same manuscript, the entire number of substantial documents and fragments totals only about forty. Manuscripts of the Old Latin are indicated by small italic letters of the Roman alphabet· *a, b, c,* etc. But the Benedictine edition uses arabic numerals.

The following are some of the most notable of these documents. Codex Vercellensis (*a*), which contains the Gospels, with lacunae, in the Western order (Matthew, John, Luke, Mark) It is of the European type, and is written in silver uncials two columns to a page on fine purple vellum. It was supposedly written by Eusebius, Bishop of Vercelli, about A D. 365, and is thus equal in age to such Greek manuscripts as Sinaiticus and Vaticanus It is now in the Cathedral of Vercelli, Italy.

Codex Veronensis (*b*), which contains, with some lacunae, the Gospels, and is a fourth- or fifth-century manuscript similar in text and appearance to Vercellensis, and likewise of great value. It is preserved in Verona, Italy.

Codex Colbertinus (*c*), which contains the Gospels in Old Latin of the European type, and the rest of the New Testament in the Vulgate. It was written in the eleventh or twelfth century in Languedoc, where the Old Latin was used down to a comparatively late period. It is preserved in Paris.

Codex Bezae (*d*), the Latin column of D Compare page 164.

Codex Palatinus (*e*), of Vienna, a fourth- or fifth-century fragmentary Gospels manuscript of the African type, written in gold and silver letters on purple parchment

Codex Brixianus (*f*), which contains the Gospels, with a few gaps It seems to be an Italian text, dating from the sixth century, and is now at Brescia.

Codex Bobiensis (*k*), a fifth- or sixth-century form of the African text of the first half of Matthew and Mark, very close to the text of Cyprian. It is now preserved in Turin, and, like Codex *e*, is of outstanding value.

The Acts is represented by Codex Bezae (*d*) and by the sixth-century bilingual Codex Laudianus (E_2, *e*) in their Latin columns. The latter has the Latin on the left and the Greek on the right-hand page, the reverse of Bezae. It is written in large uncials in lines of uneven length, most of them containing no more than one or two words. Together with Codex E_2 (see p. 168) it was presented by Archbishop Laud in 1636 to Oxford University, where it is now one of the most valuable possessions of the Bodleian Library Codex Gigas Holmiensis (*gig*), preserved in Stockholm and said to be the largest manuscript in the world, contains the Acts and Apocalypse in the Old Latin, the rest of the New Testament in the Vulgate. It is a complete Bible (including Apocrypha, Josephus, and a Bohemian Chronicle) of the thirteenth century, but includes some fragments of a palimpsest of the fifth or sixth century.

The Pauline Epistles are represented by Codex Claromontanus (*d*), a bilingual sixth-century text after the style of D, which holds an important place in the estimation of textual critics. It may belong to Codex Bezae, and was once in the possession of Beza, who obtained it from the Monastery of Clermont in Beauvais Today it is in Paris in the Bibliothèque Nationale. The ninth-century Dresden manuscript, Codex Boernerianus (G, *g*), is an important witness in the Latin column of its bilingual text. Both of these codices are classified as European.

The seven Catholic Epistles, which usually follow Acts in the Greek manuscripts, were not all incorporated into the Latin canon until the fourth century I Peter, I John, and Jude were the only ones previously recognized and received, although Jude was also much in doubt. One of the best representatives of this division of the New Testament is Codex Corbeiensis of James (*ff*), a manuscript of about the tenth century now in Leningrad. This translation is thought to be as old as the early part of the fourth century, but the questionable status of the books is indicated by the fact that this manuscript also included three extra-canonical treatises, the Latin text of the Letter of Barnabas being of special interest. Cyprian supplies numerous quotations from what appears to be the African text of these epistles.

The Apocalypse formed part of the Old Latin New Testament as far back as we can trace it. The African text of the Apocalypse

does not seem to have been revised in the fourth century as were other parts of the New Testament except Acts. Hence the text found in Primasius' commentary of the sixth century differs only slightly from the text quoted in Cyprian. The quotations from the Apocalypse in the writings of the church fathers are so numerous as almost to determine with certainty the character of the text from which they quoted.

The edition of the Old Latin by Sabbathier has been mentioned in Chapter V. Important study and publication has also been made by scholars such as Burkitt, De Bruyne, Julicher, Belsheim, Buchanan, and Vogels, and several of the more important manuscripts have been published in facsimile. The beginnings of an excellent modern edition appeared with the publication of Adolph Julicher's text of Matthew and Mark in 1938 and 1940 respectively. This work makes the version available in two forms, the "Afra" and the "Itala," together with all of the variant readings found in the manuscripts. Unfortunately it does not cite the patristic evidence. (See also Bibliography)

The extant manuscripts of the Old Latin were doubtless written just as this form of the text was gradually receding from a position of influence and power in its competition with the revised New Testament of Jerome. The fact that the two versions existed side by side for a couple of centuries—the fourth to the sixth—contributed toward their intermixture. Scholars and scribes who either studied the two translations or copied them were not always careful to refrain from inserting in margin or text familiar expressions from one or the other. Such simultaneous use of two similar Latin versions led to a larger mixture of the two versions in the New Testament than in the Old. We have noted that the superiority of Jerome's translation led scholars eventually to regard it with high favor. In the New Testament not only the faithfulness of its revision on the basis of the Greek but its harmonistic character—an attempted union of the different Old Latin texts—also gave it a larger place in the thoughts of leaders in the church. The seventh century saw its almost universal adoption in the church, except in Africa. As we have seen, however, the Old Latin text held its own for several centuries. In the New Testament it was generally quoted in Gaul in the sixth century. One old manuscript from the ninth century (St. Germain) retains the Old Latin text

of Judith, Tobit, and Matthew. Codex Colbertinus (*c*), already noticed, of the twelfth or thirteenth century, has the Gospels in Old Latin and the rest of the New Testament in the Vulgate The Perpignan manuscript (*p*) of Paris, of the thirteenth century, has Acts 1·1 to 13:7, and 28·15-31 in Old Latin but the Gospels in the Vulgate

Christianity's conquest of Great Britain and Ireland took place while the Old Latin still held sway Augustine's mission to England introduced there the Vulgate The scholars of Northumbria soon adopted this improved text and later secured the great Codex Amiatinus, already mentioned, originally written in northern England and one of the best manuscripts of the entire Vulgate now extant The Lindisfarne Gospels of about A D. 690 (see Chapter XVII), the Stonyhurst Gospels, also of the seventh century, and Codex Fuldensis of the sixth represent the same type of text The last was apparently made from an Old Latin form of Tatian's Diatessaron

The Irish, too, until after Columba's time, used the Old Latin; a single almost pure Old Latin text of the Gospels is extant in Codex Usserianus (*r*) After the year 700 the Vulgate text gained an increasingly strong foothold among the Irish, with the result that the Latin Bibles of Ireland and North Britain partook of a mixed type of manuscripts of which the famous Book of Armagh of the eighth or ninth century is an example. A discussion of the early texts in England is reserved for Chapter XVII.

There were early attempts to arrest the corruptions of the Vulgate—to purge from it the arbitrary interpolations of scribes and scholars. Within about 150 years after Jerome's day Cassiodorus made a serious attempt to revise the current text of Jerome. The bulk of our information regarding his work is found in his own instruction to the younger brethren in the monastery at Vivarium, about 544 He desires that they study their Bibles in the "emended codices," and says that his nine codices, covering the whole Bible, were revised by him "with the collation of early codices," and that he left them a Greek pandect, or whole Bible, by which, as Jerome had done, they could correct the errors in their Latin version We have no list of the corrections of Cassiodorus, nor have we any fragment of his work, unless it be part of the great Codex Amiatinus (of the eighth century), already described.

The divisions of this codex and its introductory matter accord with Cassiodorus' own account of his work.

The Vulgate was carried to England, and thence also into Ireland, in Augustine's day and immediately thereafter, becoming somewhat modified by the Old Latin Later this English text was carried back to the continent, to France, Switzerland, and Germany. It was copied and multiplied by Irish and British monks in continental monasteries, and further changed to accord with other texts found in these several countries. To this condition of things we are indebted for the prolific crop of manuscripts from the ninth century.

The Moors practically shut up northwestern Spain to itself. Closed in their mountain fastnesses the Spanish monks perpetuated their own Old Latin Bible, which they interpolated and expanded to suit their fancy until their text became exceedingly corrupt. Outstanding examples of this Spanish text are contained in codices Cavensis of the ninth century and Toletanus of the eighth. The Irish manuscripts that had been brought to Europe and the Spanish documents met in Gaul or France, and created a double confusion.

Charlemagne was fully aware of the situation and set about to find a remedy, that the church might have a unified or uniform standard Bible. The records tell us that in 797 he put the task into the hands of an Englishman, Alcuin, Abbot of St. Martin at Tours and the leading scholar of the day. Having at hand both Spanish and Irish manuscripts, he sent to his native place, Northumbria, for additional documents and documents of a less corrupt character. On the basis of these manuscripts, regardless of the Greek, Alcuin revised the current Latin Bible On Christmas, 801, he presented to Charlemagne his revised edition. This is most nearly represented today in the fine Codex Vallicellianus at Rome.

Others besides Charlemagne became conscious of the need of a revision of the Bible. Theodulf, Bishop of Orleans (787-821), through his acquaintance with southern France and northern Spain put himself in possession of both Irish and Spanish manuscripts. By an industrious study of all these texts he produced a revised text of the Vulgate. But his revision is not of much critical value because of its unevenness, and because of his method of putting in the margin the variants which he had collected, thus giving a permanent place to many cor-

ruptions of the Spanish texts. This revision is best represented by a Latin Bible in the National Library at Paris, numbered Lat. 9380. Theodulf's privately undertaken revision exercised little influence on the history of the text.

The monastery of St Gall, near Lake Constance in Switzerland, was the home of a particularly zealous and active school of Bible students in the ninth century. Irish monks flocked to its retreat and took with them their own style of writing. Under the great scholar Hartmut, in the ninth century, this school produced many Biblical manuscripts written by Irish scribes, and by native scribes in imitation of the Irish style. This peculiar style seems to have prevailed in the upper Rhine Valley. The text, however, perpetuated at this place came from Italy and Spain. The St. Gall fragments of about A.D. 500, edited by C. H. Turner and posthumously published by his colleague Alexander Souter in 1931, are considered to comprise the oldest extant Vulgate manuscript of the Gospels. Another non-Cassiodorian Italian text of the same type is represented by the Harleian Gospels, a sixth- or seventh-century British Museum manuscript. These are generally inferior to the Amiatinus or Cassiodorian group. According to Wordsworth and White's classification into six varieties, there is also another type midway between them and the Irish group, represented by a sixth- or seventh-century manuscript in the Bodleian Library at Oxford.

But the close of the ninth century saw the decline of Charlemagne's influence, the deterioration of the Biblical texts copied in the monasteries, and the decadence of the power of Christianity in France. The invasion of the Normans crushed the school at Tours, and the Danes broke up the famous schools at Wearmouth and Jarrow in England. In these calamities, Biblical scholarship of every kind received almost a death blow. Lanfranc, the Archbishop of Canterbury (1069-89) is said to have done some correcting of all the books of the Bible and to have taught his pupils the same. But unfortunately nothing of these labors remains. Stephen Harding, Abbot of Citeaux, about the middle of the twelfth century collated good Latin and Greek manuscripts and made a revision of some considerable value that is now preserved in four volumes in the library at Dijon, France. Cardinal Nicolaus Maniacoria likewise issued a revision, now extant in a manuscript at Venice.

The thirteenth century was marked by an astounding spirit of re-

vision in France, due in the main to the influence of the king, St. Louis, and to the vigorous scholarship generated by the new University of Paris There was most extraordinary activity in the production of new Latin Bibles Roger Bacon tells us that theologians and booksellers combined to produce a fixed type of text, which he calls Exemplar Parisiense. The fame of the University created a large demand for these books, and they went far and wide. But the Exemplar Parisiense was a corrupt text which Bacon deplored This defect scholars attempted to remedy by uniting their researches in the production of a list of corrections based mainly on Latin and Greek manuscripts and called *Correctoria Bibliorum*. Four separate bodies of men or individuals prepared as many lists of corrections to be employed by the Bible students and copyists in Paris and in Rome These counters to the multiplication of degenerate texts of the Vulgate furnished a partial remedy. The most important contribution to the form of our Bible that sprang out of the Paris activity was the formal division of the Bible into chapters Paragraph and section divisions had already existed for centuries But Stephen Langton, a doctor in the University of Paris, and later Archbishop of Canterbury, probably made the divisions of our Bible known as chapters, about A D. 1228.

The masses of corrections that had been collected were profitably employed before the Vulgate was put into permanent form by the printing press When the literary revival of the fifteenth century struck the various national coteries of Biblical students, strenuous effort was made to find the best possible text of each version. At the invention of printing steps were taken to put the Latin Bible into permanent form. As we have already noted, the first complete book to be issued from the printing press was a Latin Bible—the Vulgate—printed in two volumes by Gutenberg and Fust, at Mayence (Mainz), about 1455. It is commonly known as the "Mazarin Bible," for it was first found in recent times in the library of Cardinal Mazarin. It was made, however, from some inferior manuscripts, and, with all its beauty as a piece of mechanism, it is full of errors. Thenceforth Latin Bibles poured forth in profusion from the press. It is said that during the first half-century of printing 124 editions were published. In 1514-22 the Complutensian Polyglot presented as one of its texts the Vulgate revised with the aid of several ancient manu-

scripts. In 1528, Stephanus' Vulgate Bible, a critical text based on three manuscripts, was issued at Paris; later (1538-40) a larger edition appeared which had been prepared on the basis of seventeen manuscripts. This is in reality the foundation of the official Roman Vulgate, adopted at the Council of Trent, April 8, 1546 The first Latin Bible to contain the modern verse divisions was a small octavo edition of Stephanus, dated 1555

The authority granted by the Council of Trent for the publication of an official Vulgate was not immediately put to use. Professor John Hentenius, of the University of Louvain, by the use of thirty-one manuscripts and two printed copies, prepared a private edition (1547) that was often reprinted. Several of the popes bestirred themselves to prepare an official edition that would answer the requirements of the church. After the Council of Trent in 1546 decreed the Vulgate to be the official text and called for an emended edition of it, the oldest and best manuscripts were collected and a commission was appointed to undertake the project. The work lagged, however, until Sixtus V came to the pontificate, 1585-90. With great zeal and diligence he pushed forward the work. Manuscripts, printed editions, and the original Hebrew and Greek were taken into consideration, the readings which agreed with the Hebrew and Greek receiving the preference where there was disagreement between authorities.

The edition produced by the commission was printed and published by the Vatican press in three volumes in 1590, and was designated the "Sixtine edition." It was intended to be that authorized by the Council of Trent; and by the bull recited in the Preface it was to be used in all the churches in the Christian world. No other edition should be published without the permission of the Apostolic See, nor should it be reprinted in any other place than the Vatican for the next ten years Such other editions as might appear subsequently should be carefully collated with the Sixtine edition, should be accompanied with an official attestation, and should have "no variant readings, scholia or glosses printed in the margin." Violation of these orders was to be punished by the greater excommunication

But this first official Vulgate did not meet with an enthusiastic

reception Its requirements and its new translations were unpopular, and after the death of Pope Sixtus V in the year of publication the College of Cardinals almost immediately stopped its sale In 1592, Clement VIII called in the edition and published another official one, claiming as a pretext that Sixtus V had intended both to recall the 1590 edition because of its many typographical errors and to issue another in its place, but death had prevented it. In reality, the Sixtine edition had been carefully printed and published The real reason for the publication of the Clementine text of 1592 is thought to have been either hostility to the author of the 1590 edition or a desire to produce a more faithful text as authorized by the Council of Trent and recommended by the translation commission, whose authority Clement had apparently somewhat presumed. The text of this new edition contains about three thousand variations from that of 1590, and leans toward the text issued privately by Hentenius in 1547. Except for the correction of indisputable errors, however, it represented no considerable improvement over the Sixtine text Pope Clement VIII avoided the penalties of the Sixtine edition Preface by inserting on the title page the name of Sixtus V, thus in reality issuing it as a new Sixtine edition. After 1604 Clement's name appears on the title page conjointly with that of Sixtus V. This Clementine Vulgate of 1592 is today the standard edition of the Roman Catholic church. The few modern editions that have been issued vary only slightly from it. Hetzenauer has published an edition of the New Testament Vulgate (1899) that correctly represents its great predecessor, the Clementine text.

New translations from the Greek were produced by scholars in the Reformation period (Erasmus, Beza, Pagninus, and others), several of which exerted a great influence upon some of the early English translations. But the place of the Vulgate was never seriously questioned The first complete English Bible—the Wycliffite Bible—was translated from it, and the quality of its text (largely Alexandrian and Western) was often superior to the late Greek text. Certain of its readings occurring here reappeared only in modern English revisions and retranslations based on the critically established Greek text. Examples of such are the translation in Luke 2:14, "Peace on earth among men of good

will," and the omission of the doxology at the end of the Lord's Prayer in Matthew 6 13.

While important recent work has been done on the Vulgate by Roman Catholic scholars, such as Vogels, De Bruyne, Chapman, Denk, Ayuso, and others, the publications of the Benedictine Commission referred to in Chapter V have not yet reached the New Testament. Meanwhile Protestant scholars have also expended long years in an attempt to construct a critical text of Jerome's Latin, carefully studying and collating thousands of manuscripts and many printed editions in the process. Among the most active pioneers in this research were Richard Bentley, Bishop Wordsworth, and H. J White of England, Samuel Berger in France, and P. Corssen in Germany. More recently valuable contributions have come from Souter, Von Soden, Milne, Von Dobschutz, and many others. This work has added much to our knowledge of the original version. The labors of Wordsworth and White eventuated in the publication of a critical text, of which at last the Apocalypse has now been issued. The Gospels were published in 1889-98 and Acts in 1905. In 1911 Wordsworth died. The Epistles through Ephesians were issued in 1934, and in the same year White died. The remaining Pauline Epistles and Hebrews were brought out in 1937-41 under the direction of H. F. D. Sparks and Claude Jenkins. The Catholic Epistles were edited (1949) by Sparks and A. W. Adams, the Apocalypse (1954) by Sparks. The edition is based largely upon the Northumbrian-Cassiodorian group of manuscripts. In the meantime pocket editions of the complete Vulgate text were published by White (1911) and Nestle (1906). The latter, representing the Clementine text, has been periodically revised, a twelfth edition appearing in 1937.

CHAPTER XIV

The Syriac and Other Eastern Versions

THE Syriac Old Testament occupied our attention in Chapter VI. One of the first requirements of the Syrian converts to Christianity was an edition of the New Testament in their native tongue. Just how early it was made is not known Indeed, there are many questions regarding the origin of the Syriac New Testament which still remain unanswered. This chapter can give only in outline some of the most interesting points in the discussion.

The earliest editions of the Gospels in Syriac that are now known to Biblical scholars are (1) the Diatessaron of Tatian; (2) the Old Syriac Version or Gospel of the Separated; and (3) the Peshitta. Just when, where, how, and why these versions came to be are puzzling questions The existence of some of them was not known in Europe until the sixteenth century and some have even come to light within the last century.

1 The earliest Syriac translation was apparently a version of the Gospels current in the early centuries of Christianity, the so-called Diatessaron of Tatian, a pupil of Justin Martyr, whose death occurred about A D. 165 This Diatessaron, as the Greek name indicates, was a composite or interweaving of our four Gospels. Produced about A D. 170, it became so popular in the Syrian church in general that the bishops in the fifth century had to take vigorous steps to replace it with the "separated" Gospels. They were apparently entirely successful, for there is no known copy of the Syriac Diatessaron in existence today. Our chief information regarding the text comes from several translations of it in whole or part. (a) An Arabic form is extant in two manuscripts, now at Rome, and some fragments Editions of this text were published by A. Ciasca in 1888 and Marmardji (with a

French translation) in 1935. The best modern translation is probably the German of Preuschen and Pott (Heidelberg, 1926). (b) Quotation in Armenian is found in a translation of the commentary of Ephraem Syrus (died 373) It was discovered by Ezra Abbot in 1880 from a Latin version of the Armenian published by Mosinger in 1876. (c) A fourteen-line fragment in Greek from the early third century was discovered at Dura Europa in 1933 and published in 1935 by Professor Carl H. Kraeling, then of Yale. A few quotations are also found in some Syriac commentaries on the Gospels, and something of its composition and contents may be judged from the Latin form in Codex Fuldensis (see p. 182) and four or five readings from Holy Week preserved in Syriac lectionaries. Traces of its influence are also found in early vernacular versions of western Europe, especially the Dutch, as Professor Plooij has indicated in his studies (1923-33).

Scholars have, in fact, been divided on the original language of the Diatessaron. Several factors, such as the Greek title, the Latin translation, and now the Greek fragment found in Syria, have led to much support for the view that it was first made in Greek and then translated into Syriac. The textual quality is definitely Western in type Some scholars, notably Von Soden, thought that it had exerted a very corrupting influence on the Greek text, but this has doubtless been overstated.

2 The second version of the Syriac Gospels used in the early church was the "Gospel according to the Separated (Evangelists?) " This is known today in two forms· (a) The "Curetonian Syriac," represented by a manuscript of eighty leaves found at the Convent of St Mary Deipara in the Nitrian Desert west of Cairo in 1842, is now in the British Museum. It was named after Dr. W. Cureton, who privately published the text in 1858. (b) The "Sinaitic Syriac" is represented by a palimpsest discovered at the Convent of St. Catherine at Mount Sinai in 1892 by the Cambridge sisters, Mrs A S Lewis and Mrs A D. Gibson It was published in transcription in 1894 by Messrs Bensly, Harris, and Burkitt, with an introduction by Mrs. Lewis. Subsequent studies of this important manuscript have been numerous. In 1904 F. C. Burkitt published an edition of the Curetonian Syriac (*Evangelion da-Mepharreshe*) in which the readings of the Sinaitic manu-

script were given in the margin. This subordination did not satisfy Mrs. Lewis, who proceeded in 1910 to issue an edition in which the positions of the manuscripts were reversed. She also listed and discussed here some 300 passages in which she and Professor Burkitt differed in their transcriptions But an excellent photographic facsimile of the Sinaitic Syriac was published in 1930 by Arthur Hjelt, so that competent scholars may now judge for themselves in disputed passages. The manuscript itself remains at Mount Sinai.

The Cureton manuscript is assigned to the middle of the fifth century and contains the Gospels, with many omissions, in the Western order. The Sinai palimpsest is thought to be a half-century older. It gives about three-quarters of the Gospels, supplementing the Curetonian in such a manner as to provide us with a reasonably complete text of the Old Syriac. This version itself probably originated in the late second or early third century and is therefore a highly significant witness to the primitive text of the Gospels. Although the two forms differ considerably in those passages where they parallel each other, the readings in general are of the Western, Alexandrian, and, especially in the Sinaitic Syriac, a form of the Caesarean type The Curetonian seems to represent a text somewhat more modified by later developments. For example, it reads Luke 22.43-44, which the Sinaitic omits, and has the longer ending of Mark. One of the most famous variants of the latter manuscript is the reading in Matthew 1:16: "Joseph . . . begat Jesus, who is called the Christ." Mrs. Lewis published a volume in which she discussed this and many other interesting readings of the codex.

3. The Peshitta, the "simple" or "common" version of the Syriac New Testament, has been in continuous use in the Syrian church from the fifth century. While the name is not traceable beyond the ninth century, it may have arisen in order to distinguish the Syriac version proper and that translated from Origen's Hexapla by Paul of Tella in the early seventh century (see p. 77). The version is now generally credited to the work or direction of Rabbula, Bishop of Edessa in A.D. 411-435, since to him is attributed a translation of the New Testament into Syriac which he ordered to be put in place of the popular Diatessaron in all of the churches of his diocese, and since there is no conclusive evidence that the Peshitta was in existence before this time.

Thus the Peshitta became the "Syriac Vulgate," the supreme version of the Syriac churches, in particular, since the schism of about A D. 431, of the Nestorian branch of the church While, therefore, the Diatessaron and Old Syriac have nearly perished, the Peshitta has survived in some 250 manuscripts, about 15 of which are as early as the fifth and sixth centuries.

The text of the Peshitta represents a further revision in the direction of the later Byzantine form, of which it may be said to be an early example. Yet it retains an ancient element, especially of Western character. Its style is both less free and more idiomatic than that of the Old Syriac, so that the version is comparable in this respect, as well as in general excellence, to the Latin Vulgate. In fact, it is thought that the latter may have served as a model for the revision.

A few words should be added here to our brief notice regarding the contents of the Syriac canon (see p. 95) The Syriac New Testament of the fifth century was still lacking several of the books of the full canon, namely, the four minor Catholic letters (II Peter, II and III John, Jude) and Revelation We have seen that the Gospels, Acts, and the Pauline Epistles formed the entire New Testament of the early Syriac church. Although up to the present time there is no known manuscript or text of the Old Syriac of Acts and Paul, there doubtless was such a version, for it is distinctly confirmed in the quotations of Aphraates and the commentaries of Ephraem of the fourth century The latter are extant only in an Armenian translation, for the supremacy of the Peshitta forced out of use all rival Syriac texts But the Catholic Epistles and the Apocalypse were evidently not found in the Old Syriac, nor were any of them a part of the Syriac canon until the Peshitta included three of the Catholic letters The Syriac "Doctrine of Addai" of the second half of the fourth century offers the following instructions "The Law and the Prophets . . and the Gospel . . . and the Epistles of Paul . . and the Acts of the Twelve Apostles . . . these books read in the church of God, and with these read not any other, as there is not any other in which the truth that you hold is written."

Though there is scarcely a Syriac manuscript that contains the twenty-seven books of the present New Testament, there are some documents which contain books not found in our Greek texts. Codex

1700 in Cambridge University contains "The Epistles of St. Clement to the Corinthians" in Syriac. These Epistles stand between the Catholic and Pauline letters and have the same notations for use in church services. Other manuscripts contain Clement's *De Virginibus*, or *De Virginitate*. These instances, as well as what we have said about the Eastern canon, indicate the unique development of the Syriac church and its scholarship.

The first printed edition of the Peshitta was issued in Vienna in 1555 at the expense of the Emperor, Ferdinand I, by Albert Widmanstadt. It was based on only two manuscripts. A better text was edited by C. Schaff in 1717 This was used by Tischendorf in his editions of the Greek text A critical text of the Gospels with a Latin translation and critical apparatus appeared at Oxford in 1901, edited by Pusey and Gwilliam on the basis of forty-one manuscripts As yet we do not have a complete critical text of the version, although Gwilliam was at work upon the remainder of the Peshitta New Testament when death unfortunately interrupted his labors in 1913. The Pusey and Gwilliam Gospels and much of Gwilliam's work in the other books were incorporated in a two-volume edition of the New Testament by the British and Foreign Bible Society in 1905-20.

4. The Jacobite branch of the Syrian church was not satisfied with the current authoritative Peshitta revision. At least two attempts seem to have been made to provide a new translation and to carry over into the Syriac canon the full list of books found in the Greek New Testament The first of these was apparently produced in 508 by Philoxenus, or Mar Xenaia, Bishop of Mabug (485-519) in eastern Syria, with the assistance of his "Rural Bishop," Polycarp. The endeavor was made to translate the whole Bible into Syriac. Authorities disagree as to whether any of this version is still extant, though the translations of II Peter, II and III John, and Jude, that are now bound up with the Peshitta, are thought to owe their origin to Philoxenus Edward Pococke first edited these books in 1630 at Leyden from a manuscript of the Acts and Catholic letters in the Bodleian Library, and they were included in the Paris Polyglot of 1645 along with a text of the Apocalypse (first printed by Louis de Dieu in 1627) in what was the first complete New Testament printed in Syriac The relationship between these Catholic Epistles and the somewhat different form

edited and published by John Gwynn in 1909 is obscure, though Gwynn himself argued that the former represented the Philoxenian and the latter the Harclean version, and a recent study by Gunther Zuntz seeks to support this view. Gwynn also discovered a better manuscript of the Apocalypse in the John Rylands Library and published it in 1897. Incidentally, too, he considered these five books to be the work of the Maronite church of Lebanon rather than of the Jacobites The books were included in the British and Foreign Bible Society edition mentioned above.

5. If the Philoxenian version has survived elsewhere, it is in the form of the "revision" purported to have been made in 616 by Thomas of Harkel (Heraclea) in Mesopotamia at the same time that the Old Testament was translated by Paul of Tella (compare p. 77). This revision or version was based upon some Greek manuscripts from the Monastery of Enaton near Alexandria, apparently of the Western type, and the Syriac manuscripts record in their margins important variant readings found in Greek and Syriac codices. In addition, the version in comparison to the other Syriac versions, including perhaps the Philoxenian, is extremely literal and hence of considerable interest and value to textual critics.

An edition of the Harclean (called "Philoxenian" by the editor) was published by H. J. White in 1778-1803 and has never been superseded. Yet it was based mainly on two manuscripts (J. G. C. Adler added the evidence of two others in 1789), whereas there are now some fifty or more codices of this version known, some of them very old. The earliest dated copy is a Florence manuscript of A.D. 757, but there are seventh- and eighth-century copies in Rome. Many Syriac lectionaries also contain this version A new critical edition based on all of the available data is clearly needed, and such an edition is currently in preparation by a British scholar, William Duff McHardy

6 A fragmentary version of the Syriac also exists in a peculiar Palestinian dialect which has much in common with the Western Aramaic such as is found in the Targums to the Hebrew Old Testament. Some scholars claim that it is to be closely identified with the form of Aramaic spoken in Palestine in the time of Christ. The Aramaic language is divided into the classical Edessene, or Eastern Aramaic, and the Western Aramaic, including Jewish Aramaic and Samaritan.

The Palestinian Syriac is thought to have originated in the sixth century, perhaps in connection with an attempt by Justinian to root out the Samaritan beliefs. The version is found in a number of fragments, mostly lectionaries, dating from the sixth to the twelfth centuries. Besides the Gospels there are portions of the letters of Paul, Acts, James, and Hebrews.

This version was discovered in a Vatican lectionary dated A D. 1030 near the end of the eighteenth century by Adler, described by Adler and Assemani in 1789, and published by Count F. M Erizzo (2 volumes, 1861-64) and by Professor Paul Lagarde (1892). The Cambridge sisters, Mrs. Lewis and Mrs. Gibson, republished the text in 1899 on the basis of Lagarde's edition and the evidence of two new manuscripts discovered on Mount Sinai The text of this Syriac is mixed in type, but generally supports Western, Caesarean, and Alexandrian readings. While it has been subject to the influence of the Peshitta, it appears to have been quite independent of this and all other Syriac versions in origin. Some scholars have considered it to be related to the text from which the Georgian and "old Armenian" versions were made (see below)

The Egyptian or Coptic versions of the Old Testament were noticed in Chapter VIII. The three branches of the Egyptian version of the New Testament are likewise (1) the Sahidic, or dialect of upper Egypt, (2) the dialects of middle Egypt, (3) the dialect of Alexandria and the delta region, the Bohairic.

The Sahidic was the dialect of the Christian community whose headquarters was at Thebes Hence it was formerly called "Thebaic" The version may have originated in the early third century, and it definitely reflects a text of the Alexandrian type, with a considerable mixture of Western readings especially in Mark and Luke. At the end of the eighteenth century (1799) Woide published the known fragments of the Sahidic New Testament. Since then, and especially within recent decades in connection with the extensive finds of Egyptian papyri, large numbers of other fragments have been discovered, almost enough to complete the New Testament Some of these reach back to the fifth and even to the fourth century.

While editions of the Sahidic were published by Gousseau in 1895 and Balestri in 1904, the most valuable text was that produced by

George Horner in 1911-24 at Oxford in seven volumes. The edition was based on about 750 fragments and contained an English translation of the Coptic and a critical apparatus of variant readings. But even this excellent and painstaking work is now somewhat antiquated by new material, e.g., in the valuable J. P. Morgan Library collection and in the University of Michigan. The former, comprising about fifty codices, contains several New Testament manuscripts and has been privately published in a facsimile edition. An important text of the Acts and Pauline Epistles was published by Sir Herbert Thompson in 1932 from three Beatty papyri of about A.D. 600, two of which are in the Michigan collection and one in Mr. Beatty's own collection.

The second main Coptic dialect is the Bohairic, the primitive Christian language of lower Egypt after the decline and disappearance of the Greek in the early Christian centuries. Its central city and home was at first Alexandria, and afterwards Memphis; hence this dialect has been called, though improperly, "Memphitic." Bohairic was the literary language of Alexandria, and in spite of certain restrictions of Coptic idiom and rigidities of word order it was capable of remarkably precise translation of ideas from the Greek. More developed and artistically complete than the other dialects, it soon became supreme throughout all Egypt, so that "Coptic" today means the Bohairic form of the language.

Of the Coptic dialects the Bohairic alone preserves a complete New Testament. Over a hundred manuscripts are known, the oldest that can be certainly dated belonging to the twelfth century, though there are fragments reaching back to the ninth and a leaf of Ephesians supposedly of the fifth. Coptic manuscripts in general are difficult to date from their script alone. The Bohairic is thought to be a little later than the Sahidic in origin. It is a very good and careful rendering of the Greek, and represents a definitely Alexandrian type of text. The best manuscripts have the shorter ending of Mark and omit John 7:53-8:11. Both Sahidic and Bohairic versions seem to have regarded the Apocalypse as uncanonical.

The *editio princeps* of the Bohairic was produced by Wilkins at Oxford in 1716. The best and most complete edition is that of George Horner, published in four volumes in 1898-1905 with a critical apparatus and literal English translation. He notes readings of forty-six

manuscripts in the Gospels and about thirty-four in the other books.

Other Egyptian versions, also, occupying a place midway between the Sahidic and Bohairic, seem to have been current in the Fayum, just west and southwest of Memphis and south of the Delta. Scholars now distinguish three or more of such dialects: the Memphitic (not to be confused with the older name for the Bohairic), Fayumic, and Akhmimic. Many fragmentary manuscripts of these versions have been coming to light in recent decades. Notices of them were published serially until about 1933 in *Revue Biblique* by Hyvernat and Vaschalde (see also bibliography); a few fragments have been edited and published; and an important papyrus of the Gospel of John in "sub-Akhmimic" was published by Sir Herbert Thompson in 1924. This manuscript, assigned to the last quarter of the fourth century, differs often from both the Sahidic and Bohairic while still showing close affinities with B and W. No complete edition, critical or otherwise, of any of the middle Egyptian versions has yet been completed. When the evidence has all been made available for study it may prove of importance to an understanding of the relationship between the Western and Alexandrian texts and, perhaps, of the origins of the so-called Caesarean text.

The Armenian version of the New Testament originated about A.D. 400, according to an old tradition, the work of St. Mesrop. Owing to the flexible character of the language and the classical form of the Armenian used, the translation is probably the most accurate and beautiful of the versions. For a long time it was generally held—also in accordance with an Armenian tradition—that the first translation was made from the Syriac and later so thoroughly revised to Greek copies that scarcely any evidence remains of the Syriac base. According to recent scholars who still hold this view the translation was made from a text of Caesarean type such as may partly survive in the Palestinian Syriac. This is to explain the Caesarean characteristics of the present Armenian version, as well as of the old Georgian (see below), which was supposedly made from its unrevised form. Streeter's view that the revision was made to Greek manuscripts of Caesarean type does not seem to be supported by the evidence. Of the Caesarean element found in the Armenian there is, however, no doubt. Study by such scholars as Streeter, Macler, Lyonnet, Blake, Lake, Colwell,

and others have shown it to be an important witness to a form of this textual type, agreeing especially with the group Georgian Θ 565 700

There is also the old Armenian tradition, however, that the version was made directly from the Greek, and recent scholarship is divided in its opinion, with a growing tendency to doubt the Syriac theory. This may be seen, for example, in the significant work done in the area recently by Lyonnet, Peters, C S. C Williams, Essabalian and, somewhat earlier, by Conybeare. What Syriacisms may occur in the Armenian can be explained, it is felt, through the use of the Syriac Bible in the Armenian church up through the fourth century, or through the influence of Tatian in the form of a primitive Armenian Diatessaron, or both. The present Armenian text also has so great a homogeneity that it is difficult to identify clear traces of a revision.

Armenian manuscripts are very numerous, probably more numerous than those of any other version except the Latin Vulgate. The Armenians were zealous translators and copyists, so that several important works of antiquity have been preserved to us in their language alone All lists of Biblical manuscripts are inadequate. The oldest dated document is a Gospels codex of A D. 887 at Moscow, which has been published in photographic facsimile, but there are several others from the ninth and tenth centuries Lagrange recently described thirty-one early codices In one manuscript, dated A D. 989, an interesting colophon occurs ascribing the doubtful ending of Mark (16.9-20) to the presbyter "Ariston." It is also the oldest extant Armenian manuscript to include the pericope, John 8·1-11. Armenian manuscripts, especially the older ones, otherwise frequently omit both of these sections or mark them as doubtful. The Johannine story often is given at the end of the Gospel. The Apocalypse, though probably translated in the fifth century, was apparently not included in the Armenian canon until the twelfth. Philemon seems also to have been missing, but an apocryphal letter, "III Corinthians," is found.

The first printed edition of the Armenian Bible was that of Oskan published at Amsterdam, the New Testament in 1666 and the complete Bible in 1668. A better text was issued by John Zohrab (New Testament, 1789, Bible, 1805), based in the New Testament on eight manuscripts of the Bible, thirty Gospels, fourteen AKP, and four

lectionaries. Actually Zohrab mainly transcribed one manuscript of A.D. 1319 containing an excellent text. His edition, although therefore very good, is not really critical, and his brief critical apparatus is inadequate. The official Armenian Bible published by the Mechitarists of Venice (1864) is based on Zohrab and carries no *apparatus criticus*. The American Bible Society also publishes an inexact reprint of the Zohrab text. A good edition of the Apocalypse was published by F. C. Conybeare in 1907.

The traditions about the origin of the Georgian version are similar to those regarding the Armenian, except that the Georgian was made from the latter. As we have already briefly noted, some scholars believe that this was an older form of the Armenian than we now possess. Research by Lake, Blake, and New (Mrs. Silva Lake) identified the Georgian as an important witness to the Caesarean type of text. Professor Blake distinguished three groups of manuscripts, representing two types of text which he called G^1 and G^2 respectively, and a third form somewhat more revised in the direction of the Byzantine text which became the Vulgate of the Georgian church.

There are many important and relatively ancient manuscripts of the Georgian version, but apart from some early study and publication in Acts and Paul by Conybeare and recent research by a few scholars like Baumstark, Zorell and Peradze, little critical study has been undertaken except in the Gospels of Matthew and Mark. Blake published the text of the important "Adysh Gospels" (A.D. 897) in Mark (1928), Matthew (1933) and John (1950) with a Latin translation. Maurice Brière, his collaborator in the Johannine volume, is carrying on the work in Luke, following Professor Blake's lamented death in 1950. The entire Georgian text was printed in Moscow in 1723 and subsequently, but the only critical text is that of Matthew and Mark published by Professor V. N. Beneševič at Leningrad in 1909-11. It was based on two tenth-century uncials, the Opiza Manuscript (A.D. 913) and Tbet' Manuscript (A.D. 995). These codices differ considerably from each other, the Opiza Manuscript, for example, alone omitting Mark 16.9-20, and they are thought to represent two different recensions of the text, since other manuscripts of each type exist. Blake cites their readings in his editions. Together, however, they constitute the G^2 form of text, while the Adysh codex, which Blake thought may

represent a text current in Georgia about A.D. 600 or earlier, has been designated as G[1]. The canon of the Georgian, like the Armenian, did not originally include the Apocalypse.

The beginnings of Christianity in Abyssinia have been recounted in Chapter VIII. While Christianity secured a foothold in this country as early as the fourth century, the Ethiopic or Ge'ez version probably does not reach back beyond the fifth. There are traces of an older translation allegedly made from the Old Syriac, but the version now current was made from the Greek and often agrees with the Coptic versions. It is therefore frequently of Alexandrian quality, colored also by Western elements. There are many manuscripts, of a late date, representing revisions to the medieval Arabic text current in Alexandria. The Ethiopic New Testament also included a collection of "Clementine" literature, which was discovered to contain the Revelation of Peter, a book which had been used as canonical by Clement of Alexandria, about A.D. 180-200, and which has also come to light in an Akhmimic version. The Ethiopic New Testament was first printed in Rome in 1548-49 and reprinted at the same time in Walton's Polyglot. The British and Foreign Bible Society issued (1830) an edition prepared by T. P. Platt, which long remained standard. A similar text was published by F. da Bassano at Asmara in 1920-26. None of these editions, however, are truly critical.

The Gothic version, prepared by Ulfilas, Bishop of the Goths about A.D. 350, has also been referred to in Chapter VIII. The New Testament fragments of this translation show that it was made directly and very accurately from the Greek. The remnants that we possess seem to have belonged to northern Italy, about the time of the Lombard conquest in the sixth century. The largest fragments are portions of over half of the Gospels preserved in Codex Argenteus, a manuscript of Bohemian origin now at Uppsala, Sweden, written upon purple vellum in letters of silver and gold, and dating from the fifth or sixth century. Except for some portions of the Pauline Epistles found on a few palimpsests at Milan and a Gothic-Latin leaf of Luke at Giessen, the remainder of the New Testament is lost. The Greek text from which Ulfilas made his translation was mainly of the Byzantine type, but with a considerable mixture of other, especially Western, readings. Several editions of the text have been published, beginning with that

of Gabelentz and Loebe (1836-43). The best is the two-volume work of W. Streitberg (1908; second edition, 1919). A photographic facsimile was published by the University of Uppsala in 1927. Significant studies of the language and text of the version were published by C. W. S. Friedrichsen (Gospels, 1926; Epistles, 1939) Representing as they do the only extant Gothic literature, the Biblical remains of this translation are of special philological as well as textual interest.

The other versions are of comparatively little value for the textual criticism of the Greek New Testament The Arabic were made, some from Syriac, some from the Greek, and some from Coptic, in the seventh to ninth centuries The current form is mainly from the Bohairic, with corrections and additions from the Greek and Syriac. The salient facts about the origins of the Slavonic and Persian, which are even later, have been given in connection with the Old Testament discussion. There are many manuscripts of the Slavonic, the best text of which was based on the Greek, but they are apparently not earlier than the eleventh century and are of minor critical value. Some preliminary study and publication has been made by Professors G. N. Vospresenski at Moscow and Josef Vajs at Prague. The late Professor Ropes suggested that the old Bohemian might be worthy of study in Acts for its Western elements, and traces of a Caesarean element have been claimed for the Persian. Minor as well as major versions may thus have a contribution to make to the restoration of the earliest Greek text and to a knowledge of the history of the text.

CHAPTER XV

Textual Criticism and the Printed Text

IN THE preceding chapters we have described scores of manuscripts, versions, and quotations. We have also noted that the text of the New Testament became corrupted in the process of transmission, and that the corrupt text became dominant as time went on. By the judicious use of the textual materials, however, Biblical scholars can now detect and remove scribal and other errors and give us a form of the text closely approaching the very writings of the apostles and evangelists.

Unfortunately this process of textual criticism in the New Testament was seriously retarded by the circumstances surrounding the first printings of its text. For, although the new method of reproducing documents did away with the fallible work of the copyist, the earliest printed editions of the Greek New Testament reproduced a form of the late medieval text. This is, of course, not strange, since these printings preceded both the discovery and use of the oldest and best documents and the real work of textual criticism. Such work, when it got under way, consisted first of showing the inadequacy of the late text and then of efforts to displace it with an earlier one. By that time, regrettably, the late form had been firmly established by many reprintings and by translations made from it into Latin, English, and other languages, so that its displacement was no easy task.

It will help to an understanding of the process, however, if we sketch briefly the developments of this early period, when the late or "received text," as it came to be called, had its rise and supremacy in printed form. This period lasted roughly from the time of the Erasmus edition of 1516 to the time of Lachmann (1831), or actually over three hundred years.

The earliest printed edition of the Greek New Testament was that incorporated in the Complutensian Polyglot, printed in 1514-17 and published in 1522 under the supervision of Cardinal Ximenes. Its text was based on many manuscripts whose identities are now uncertain, but it was late in form and exerted comparatively little influence. Erasmus, the Dutch scholar, was the editor of the first published Greek New Testament (1516) Although one of his half-dozen manuscripts was the important minuscule 1, his text was based chiefly on two inferior documents preserved in Basle, one of the Gospels and one of the Acts and Epistles, and only one manuscript of the Apocalypse. The latter was incomplete, particularly in the last six verses, so that Erasmus translated from Latin into Greek to fill up the lacunae The first edition, which like the Complutensian Polyglot also included the Latin Vulgate in a parallel column, contained many errors, partly due to hasty preparation in order to anticipate the Ximenes edition. These were largely corrected in four later editions published between 1519 and 1535, but Erasmus never seems to have had more than eight or nine manuscripts at his disposal, and the text remained late Byzantine in form. The third edition (1522) is noted for its introduction of the "three witnesses" passage in I John 5 7, read by the Vulgate and therefore also by the Complutensian Polyglot. But it has never been found in any Greek manuscript since Erasmus' day, when he was persuaded to include it on the basis of an inferior Greek document. He omitted the passage in his later editions, but because the third edition became the basis for the later standardized text it came into the English Bible and remained there until the time of the Revised Version.

The famous scholar and printer, Robert Stephanus (Estienne), of Paris, also published several editions of the Greek New Testament, beginning in 1546 His text was based on Erasmus (1535), the Complutensian Polyglot, and eventually fifteen manuscripts in the Paris Library. The third edition (1550), the superb Paris folio known as the "*editio regia*," became the standard text of Britain The fourth (1551) is notable for the first appearance of the verse divisions in the New Testament These were prepared by Stephanus during a horseback journey from Paris to Lyons, the poor divisions in spots suggesting that some of the work was done on the horse.

The next great editor of the text was Theodore Beza, whom we have already had occasion to mention in connection with the codex which bears his name. Beza produced ten editions, four folio and six octavo, beginning in 1565 The folios contained a Greek text almost identical with that of Stephanus, together with the Latin Vulgate and Beza's own Latin translation in parallel columns and an extensive commentary of notes The last folios of 1588-98 exerted a great influence upon the King James Version, especially through the Geneva Bible, and Beza's authority helped fix the current Greek text. On the Continent, however, the form of text which became standard, and from which the name "Textus Receptus" or "received text" itself derives, was an edition by the two Dutch printers, the Elzevir brothers They published seven editions based on Stephanus and Beza between 1624 and 1678. The second (1633) edition contained in its Preface the claim that this was the text received by all and free from change or error (*"Textum ergo habes, nunc ab omnibus receptum in quo nihil immutatum aut corruptum damus"*) This text differed from the Stephanus 1550 edition in only 287 instances according to Scrivener's estimate.

It is plainly evident that such a text, based on a few comparatively late manuscripts, was not likely to be a very exact reproduction of the original documents of the New Testament As the years went by, manuscripts of earlier dates were discovered on every hand. Documents reaching back as far as the fourth century were brought to light, which stood several centuries nearer the autographs than any of those that formed the basis of the "Textus Receptus" The gift of Codex Alexandrinus to Charles I in 1628 stimulated much interest in the study of the text. Bishop Walton's Polyglot of 1657 (also known as the London Polyglot), though printing the text of Stephanus 1550, gave readings of Codex Alexandrinus, sixteen other manuscripts, and several of the versions Scholars began to compile collections of variant readings. The text of John Fell (1675) had a large critical apparatus for its day By the time that John Mill published his edition of the Stephanus text in 1707, he was able to cite over 30,000 variants. Mill himself added evidence from 78 new manuscripts, the greatest single contribution to the time of Tischendorf over 150 years later. He also made the first extensive use of patristic quotations.

Other scholars who in the eighteenth century added significantly to the materials available were Richard Bentley, J. A. Bengel, J. J. Wetstein, J. S. Semler, J J. Griesbach, C. F. Matthaei, and Andrew Birch Wetstein issued a two-volume text in 1751-52, largely Elzevir, in which he gave the largest and best critical apparatus to date and introduced the present form of manuscript nomenclature. Griesbach's editions of 1774-77 and 1796-1806 also contained a rich apparatus Matthaei (1782-88) added about 75 Moscow and other manuscripts, and Birch, whose valuable work was subsidized by the King of Denmark, collated many important Italian documents and first published the readings of Codex Vaticanus F. C. Alter at about the same time contributed the evidence of Vienna sources. The Roman Catholic John A. Scholz a little later (1830-36) added evidence from about 600 codices, but only a dozen or so were complete and the work unfortunately was inaccurate. On the other hand, the English scholar S. P Tregelles contributed many descriptions and collations which were notable for their excellence. Although Sinaiticus was not available to him, and he was unable to recollate Vaticanus, his edition of 1857-72 had the fullest and best apparatus to that time and exerted a great influence against the Textus Receptus in England In this period, also, F H A. Scrivener and J W. Burgon collated a number of manuscripts, and the latter compiled an amazing collection of several manuscript volumes of patristic citations, now in the British Museum.

But the greatest discoverer, collator, and publisher of manuscripts was L. F. Constantin von Tischendorf, a professor at Leipzig and, as we have noted, the finder of the great Codex Sinaiticus. A tireless traveler and worker, he discovered over twenty uncials, published editions of most of them for the first time (including א B2 C D2 E2 L), and published many editions of the Greek New Testament. The most important of these for its extensive and still indispensable critical apparatus was the eighth major critical edition (1869-72). The patristic evidence was of special value Tischendorf died in 1874 and Professor C R Gregory of Leipzig, a disciple of his as well as of Hort, prepared the prolegomena to the edition with assistance from Ezra Abbot. Originally appearing in a three-volume Latin form (1884-90-94), it was translated into German and expanded into a complete introduction to the subject and the most extensive catalogue of the known

materials (manuscripts, versions, and church fathers) compiled to the time of publication in 1900-09 (see Bibliography). Nearly two thousand manuscripts were listed, and the nomenclature introduced by Wetstein was adopted and improved. This monumental contribution remains an indispensable tool for the student of New Testament text Gregory had also planned a ninth edition of Tischendorf to bring it up to date, but death intervened to prevent this

Tischendorf's text in his last editions was strongly influenced by Codex Sinaiticus and the work of Lachmann, which represented a radical departure from the Textus Receptus of the preceding period. We must touch here briefly upon this development and upon the rise of critical method in the use of the materials now available

Up to this time all editions of the Greek New Testament had reproduced forms of the received text. But several important contributions besides the collection of variant readings were made to the development of a methodology which was eventually to overthrow it. Richard Simon, a French scholar, made valuable observations in several historical treatises (1689, 1695) Edward Wells (1709-19), William Mace (1729) and E. Harwood (1776) first printed texts which often departed from the Textus Receptus in the adoption of earlier readings. In 1720 Bentley, a great classical scholar, issued certain important "Proposals" for publishing a text of the fourth century, but caustic criticism, other work, and finally death prevented him from carrying out his purpose Bengel (about 1734) introduced into his apparatus five classes of readings, three of which were considered to be better than or as good as were to be found in his text. Following a suggestion of Bentley's, he first proposed a classification of manuscripts into families ("Asiatic" and "African") and first enunciated certain important principles of criticism, such as that manuscripts should be "weighed" and not merely counted, and that a harder reading is generally to be preferred to an easier one. Semler carried on Bengel's work and eventually (about 1767) prepared a threefold classification of authorities ("Oriental," "Western," and "Alexandrian"), which he first called "recensions."

But the real work of textual criticism begins with Griesbach, a pupil of Semler's. In his editions (1774-76, 1805) he preferred to call the late text "Constantinopolitan" or "Byzantine," and proposed that

its source was the other two. He also proposed five canons of criticism, which added to previous ones the principles that no reading without the support of some ancient witness should be adopted—though conjecture was eventually not entirely excluded—, that families rather than individual manuscripts primarily should determine readings, and that the shorter reading and the reading which at first appears to convey a false sense should generally be preferred. The chief weakness in his work seems to have been failure to take adequate account of mixture in texts, although he first clearly called attention to it in individual manuscripts. His views were followed by J. L. Hug, who suggested that a primitive text had been variously corrupted into the forms of the "Western" text, which in turn was subjected to recensions by Origen (Palestine), Hesychius (Egypt), and Lucian (Syria), corresponding to those of the Septuagint. His views oversimplified the problem, but he anticipated certain modern developments in the more prominent place given to the Western text and in his characterization of the text of B as a recension. Aside from his work, however, Griesbach's views were generally disregarded, and little progress was consequently made for the next fifty years.

With Carolus Lachmann, Professor of Classical Philology at Berlin and editor of a number of classical texts, begins what may be called the recession and rejection of the Textus Receptus. In his small edition of 1831 and larger edition of 1842-50 he first entirely disregarded it and the manuscript support upon which it rested. With the purpose of establishing a fourth-century text, he was interested in only the two families of documents which he called "Oriental" (A B C etc., Origen) and "Occidental" (D D_2 E_2 F G_3 H_3, etc., Old Latin, Vulgate, Western Fathers). In the six rules of criticism which he proposed he placed an emphasis on consideration of regional support for a reading. More weight was to be given to a reading whose support came from different geographical areas. The weakness of Lachmann's work lay in a neglect of documentary groups and in his almost entire disregard of the minuscule evidence, as well as in an inadequate use of patristic and—aside from Latin—of versional testimony. Nonetheless, his influence was heavy against the Textus Receptus on the Continent.

As we have noted, a similar effect was produced in England by Tregelles, who followed up the achievements of Lachmann with the

more ambitious aim of producing the oldest possible text. His use of the evidence was more accurate, comprehensive, and judicious, and he is credited with the first clear enunciation of the important principle of the comparative criticism of documents, i.e., the identification of early readings by the combined testimony of manuscript, versional and patristic evidence. He also gave special regard to matters of internal or intrinsic evidence, that is, due consideration to what the author of the document may originally have written, as judged by his general purpose, interest, prejudices, style, etc. Tischendorf included this emphasis among his "rules," and also enunciated the principles of preference for readings which might explain the rise of all other variants in a given passage and for readings in the Synoptic Gospels which showed differences in parallel passages

In spite of the excellent work of Lachmann, Tregelles, and Tischendorf, proponents of the traditional text continued active in the nineteenth century. It was championed by the learned and belligerent Burgon and the scholarly Scrivener. The latter reissued the Textus Receptus at Cambridge in 1860 and subsequently, the edition of 1877 containing variations of Beza (1565), Elzevir (1624), Lachmann, Tischendorf, and Tregelles. Henry Alford, Dean of Canterbury, who published six editions between 1849 and 1861, inclined at first toward the Textus Receptus, but later came over to the Tregelles-Tischendorf type of text.

The final blow was administered to the Textus Receptus by the work of the British scholars, Dr. F. J. A Hort and Bishop B. F. Westcott. The two collaborated in the production of a text and in the elaboration of a theory of criticism which has had an enormous influence from their day to this. Building upon the achievements of the scholars whom we have noticed, they brought out in 1881-82 a two-volume edition of text (without critical apparatus) and method which was some thirty years in preparation and has become a sort of watershed in the history of the textual criticism of the New Testament

In their classification of authorities for the text Westcott and Hort used the terms "Western" and "Syrian" (or "Antiochian") for two of the groups previously identified, and divided the third into "Alexandrian" and "Neutral" In our discussion of materials we have already referred to these designations and have indicated certain of the chief

witnesses to each, anticipating also the later definition of the so-called "Caesarean" type of text. But for an understanding of the Westcott-Hort theory and method, as well as of developments subsequent to their time, it will be well at this point to add a few words about the reasons for the classification and about the characteristics of each group.

The "Neutral" text, as the name implies, was considered by Hort to be the purest extant form. It was thought to be entirely free from corruption and mixture with other texts and to represent the nearest approach to the New Testament autographs. Its best representative was Codex Vaticanus, and its second best, Sinaiticus. These two codices were thought to be derived independently from a common original, at no great distance from the autographs. When their readings agreed, the evidence for Westcott and Hort was generally conclusive against overwhelming numerical evidence of later witnesses, unless internal testimony contradicted. An outstanding example of the latter is found in the "Western non-interpolations" to which we have previously alluded In general, readings unknown to the Neutral, Alexandrian, or Western texts were to be rejected as "Syrian," and no reading from the Western or Alexandrian was to be admitted without some support from the Neutral The other chief witnesses to the Neutral text have been mentioned in the preceding chapter We may add that among the church fathers such "Neutral" elements were considered to be most numerous in Origen, Didymus, Cyril of Alexandria, and Eusebius; and, among the versions, in the Coptic.

The "Alexandrian" text supposedly represented Greek scholarship such as might be expected to emanate from Alexandria, a center of Greek learning, operating upon the text to give it smoothness and linguistic correctness Such a text was therefore to be found predominantly in the quotations of the church fathers of Alexandria, such as Clement, Origen, Dionysius and, Cyril, to some extent in Eusebius of Caesarea, and in the Coptic version, particularly in its Bohairic form There was a notable absence of the extraneous additions found in texts like those of the Western group in both Neutral and Alexandrian, but the latter was thought to be distinguishable as less primitive than the former.

The "Western" text, so-called, was to be most readily recognized in the Old Latin version and the bilingual uncials written in the west

(cf the previous chapter). But traces of it were to be found in the other versions, especially the Old Syriac; and the Greek text used by the ante-Nicene fathers, where they did not come into contact with Egypt, was in general Western in character. This type of text seems, therefore, to have had its origin very early, before the copying of manuscripts was done with adequate care, and before it was regarded as wrong to interpolate, expand, contract, or omit at will such passages as to a scribe seemed in need of alteration. For these appear to be the outstanding characteristics of the Western text. Many old and important readings are to be found in it, and it is therefore often in agreement with the "Neutral" text, but its peculiar readings must be weighed carefully before being adopted.

The "Syrian" text was produced in Hort's opinion by the Greek and Syrian church fathers as a revision of existing texts in the vicinity of Antioch in the late fourth century Being later in origin than the other groups, it was consequently not of equal authority with them. In fact it was simply considered to be the result of combining non-Syrian readings As such it was a full text, characterized by conflation and attempts to smooth out difficulties. The uncial codex, Alexandrinus, in the Gospels, and the Peshitta Syriac are good early representatives of this text, and Chrysostom, Archbishop of Constantinople (died 407), made use of it in his extensive homiletical works. The later Greek fathers, including the great Biblical scholar, Theodore of Mopsuestia (died 429), also employed it. And most of the later uncials as well as the large mass of cursive Greek manuscripts belong to this group. The Textus Receptus is a late and corrupt form of it.

The most signal contribution of Westcott and Hort, however, was in the area of method, as set forth by Hort in their second volume in a comprehensive theoretical statement and a discussion of disputed passages. In brief summary, they indicated that from a study of the sources of corruption of the text in the manuscripts (involuntary or intentional) it becomes clear that some manuscripts are better than others because their readings possess a higher presumption of primitiveness when judged according to the "observed proclivities of average copyists" ("transcriptional probability") and according to the context judged most suitable to the characteristics of the original author's thought and style ("intrinsic probability") Such witnesses were to be

preferred in a given reading either individually ("evidence of documents") or, especially, in groups ("evidence of groups"), unless there were weighty reason to the contrary. Emphasis was thus again placed upon the quality rather than quantity of the evidence, and upon the age of the text of a manuscript rather than the age of the manuscript itself. In this connection great stress was also laid upon the study of the interrelationships of the witnesses on the assumption that their ancestries could be thus established, the relative age and value of their texts determined, and the primitive text discovered by the reconstruction of a family tree of the documents ("genealogical evidence") Recognition was also made of the difficulties involved here due to conflation and mixture of readings. When the better manuscripts were found to be ranged on different sides, the personal judgment of the critic would be the final arbiter. He would be guided by certain principles of probability such as we have already noted. In addition, Hort, like Tischendorf, emphasized preference for a reading which would explain the origin of other variants but could not itself be so explained. Also, a variant which combined the appearance of improvement with the absence of its reality was to be suspected ("coincidence of intrinsic and transcriptional probability"), because a scribe was unlikely actually to improve the text even though he thought he was doing so.

While the theory and text of Westcott and Hort were currently and subsequently subjected to certain valid criticisms and modifications (see next chapter), the influence of their work was tremendous and it was widely received with favor and approbation. As members of the British Revision Committee they made their text available to the English revisers, and their personal influence was effective in helping to establish as the basis of the Revised Version a much more accurate and primitive text than had ever previously been used for such an undertaking. Students and translators made much use of it, and several modern speech versions were made from it. Although a number of major and minor editions of the Greek New Testament appeared later, and Scrivener republished the Textus Receptus in 1882 and subsequently, the Westcott-Hort text soon became a standard for general usage, and other critical texts have not varied greatly from it It marked, therefore, the final rejection of the "received text," and itself became a sort of textus receptus in Britain and America

CHAPTER XVI

Textual Criticism Since Westcott and Hort

THE supremacy and popularity of the Westcott-Hort text continued for many years. The research of Bernhard Weiss and the propagation of the Nestle text (see below) especially helped to establish its wide usage. At the same time questions were inevitably raised about it owing to the discovery of new materials and to the critical study of the textual theory upon which it was based.

Our review of materials in a previous chapter has indicated something of recent discovery. Unknown to Westcott and Hort—to mention only a few items—were the Beatty papyri, the Washington Gospels, Koridethi, the Washington Manuscript of Paul (I), the four purple parchment codices of the sixth century, Laurensis (Ψ), the Sinaitic Syriac, several important Coptic and Old Latin texts, and the more reliable editions of the patristic writings which have appeared both in the two great series of publications, the Berlin Corpus of the Greek and the Vienna Corpus of the Latin fathers, and in a variety of monographs and studies

In addition much progress has been made in textual theory. The Westcott-Hort "Neutral" text was found to be practically without support in the earliest fathers, and appeared itself to be a recension virtually indistinguishable from their so-called "Alexandrian" form. The growing realization of uncontrolled variation in the transmission of the text in the first two or three centuries and of extreme mixture in its later history led to considerable doubt of Hort's emphasis on the possibility of traveling back nearly to the autograph by the reconstruction of a family or genealogical tree There were—to change the figure a bit—too many missing links. The method actually worked out in very limited areas and Hort himself made very little use of it, neg-

lecting the history of the text in favor of an extreme reliance upon Vaticanus and Sinaiticus. A restatement of the method in terms of a statistical "rule of iron" was made by Dom Quentin in connection with the Benedictine Vulgate project; but this was severely criticized, among others by M. J Bédier, who also showed that the genealogical method applied to classical authors generally resulted in a two-branched family tree which conveniently allowed the editor a final choice of readings. Indictment of the Westcott-Hort theory and method was climaxed by H C. Hoskier's detailed treatment in his two-volume work, *Codex B and Its Allies* (1914). It became increasingly clear that the term "Neutral," not to mention the title, *The New Testament in the Original Greek*, was at least presumptive, if not erroneous.

The attachment of more significance to the evidence of versions and fathers marked one of the main paths of divergence from the Westcott-Hort position Growth of interest in the Western text was one important result. This was stimulated by the discovery of the Sinaitic Syriac, by study of the Old Latin, by studies of Codex Bezae (R Harris, B. Weiss, and, later, H J. Vogels), and by Rendel Harris' significant *Four Lectures on the Western Text* (1894), in which he warned against canonizing the Westcott-Hort edition. Such studies of patristic writings as P M Barnard's work on Clement of Alexandria and Sanday's on Irenaeus showed the extreme antiquity and widespread usage of the Western form. Various theories were proposed to explain it Hort had thought of it as a revision, perhaps made at Antioch about A.D 125-140, which quickly became the official New Testament text in widely scattered areas. Harris and Vogels claimed that Codex Bezae represented a Latinized Greek text. F H Chase thought that it was influenced by the Syriac F Blass revived and gave some currency to an older view that Luke had himself produced two editions of Luke-Acts, represented respectively by the Western and Alexandrian forms. The problem of these strikingly divergent texts, especially in Acts, has continued to be agitated now for well over half a century without complete settlement. A. C. Clark in his treatment of the Gospels and Acts (see Bibliography) defended the Western form, regarding the shorter readings of the great uncials first (1914) as accidental and later (1933) as purposeful excisions of the supposedly

more primitive and longer text. But in his valuable volume on the text of Acts in *The Beginnings of Christianity* (1926), J. H. Ropes took the view that the Western text was in general an inferior rewriting, perhaps expressly created for the earliest canon. This estimate of general inferiority has prevailed, but it is modified by the conviction that Western readings cannot be dismissed without careful consideration, and that a number of them bear the marks of authenticity. This was well demonstrated by Professor G. D. Kilpatrick in articles published in 1943 in the *Journal of Theological Studies*.

The use of the term "Western" has also become subject to some criticism and modification. Hort had used it of almost anything which did not fall into his other textual categories. But it is now generally felt that the name should be limited at least to those witnesses which are geographically western, i.e., the bilingual codices, the Old Latin, and certain of the fathers such as Cyprian. The Old Syriac and comparable texts would better be designated separately as "Eastern" or "Syrian" (not to be confused with Hort's "Syrian"). This separation of the Old Syriac is justifiable on at least two counts. It is not geographically western, and its readings almost as often support Alexandrian or Caesarean texts as they do Western. Even so, considerable divergence exists within the remaining Western group, for example between the European and African forms of the Old Latin.

It thus became evident that a number of different and somewhat localized texts appeared in the second and third centuries. In his important study, *The Four Gospels,* published in 1924, Canon Streeter proposed a theory of such "local texts," in which he classified the early witnesses in five groups and connected each with one of the principal ancient sees of Christianity, namely, Alexandria (Bℵ L sa bo), Antioch (Old Syriac), Caesarea (Θ fam 1 and 13 28 565 700), Italy-Gaul (D b a), Carthage (k W^{Mk} e). Besides the primary and secondary evidence, which we have reproduced here, he identified two other groups of subordinate value, plus patristic witnesses. While this reconstruction has not entirely held up, it conveys much truth. Differences of opinion especially concern details of definition and the significant question whether most of the so-called texts should not be considered as processes of growth rather than definite, editorial recensions made at a particular time and place. Strangely enough,

therefore, while there has come to be widespread agreement that the Alexandrian text represents a geographically and chronologically localized treatment, the same interpretation of the other supposed "recensions" is being seriously questioned.

The total picture has been further complicated by the discovery of the so-called "Caesarean" text, of whose character, support, and significance we have already given some intimation. This interesting and significant development deserves a further word of explanation. Professor W. H. Ferrar of Dublin discovered, in about 1875, that four manuscripts (13, 69, 124, 346) were textually related. To these, collectively known as Family 13 or the Ferrar group, other scholars added new witnesses from time to time, until now there are about a dozen altogether. In 1941 the Lakes attempted a genealogical reconstruction of the family relationships and printed the "archetype" in Mark. Their investigation also led them to conclude that the ancestor of the group was a document written before the eleventh century in Palestine or on Mount Sinai.

Meanwhile Kirsopp Lake identified another related group of manuscripts (1, 118, 131, 209, to which 1582 was later added), which he called Family 1, and of which he published a description and evaluation in 1902. Here he demonstrated the relationship of this group to Family 13, as well as to certain other codices, viz., 22, 28, 565, 700 In 1923, after the discovery of Codex Theta, he and Professor R. P. Blake showed the connection of this manuscript to the total group, which then became known as Family Theta Subsequently Codex W in Mark (5-16), some early papyri, and the Beatty papyrus, P^{45}, were added to the related documents. Some other weaker representatives were also found in von Soden's groups (see below), especially in I^{ϕ}.

Canon Streeter in 1924 followed up the suggestions regarding the Koridethi text and showed that its characteristics were to be found in the other Gospels as well as in Mark. He also christened it "Caesarean" because he found that Origen had employed a form of this text in certain of his writings composed in Caesarea after A D 231, although earlier in Alexandria he had used an "Alexandrian" text. Eusebius, too, was a partial witness to its existence there. But while it is conceded that such a text was localized at Caesarea—and, indeed, Lake had suggested back in 1900 that certain minuscules of the Theta

group might be connected with that locality—yet the designation "Caesarean" proved to be unfortunate as a general name for the whole aggregation This was indicated by the fact that Origen also used such a text in Alexandria and that Codex W and certain papyri reflected its presence in Egypt. It was most dramatically demonstrated by the discovery of the Beatty papyri, which in the Gospels proved to be of this textual type. On the other hand, the work of various scholars (e g., Macler, the Lakes, Blake, Colwell) had confirmed Streeter's citation of the Georgian as a witness and had also identified the Armenian as of equal or superior value in this regard. Caesarean readings were also detected, as we have noted, in other versions, especially the Sinaitic and Palestinian Syriac, and traces of Caesarean influence have supposedly been found in the Harclean Syriac, Persian, and Arabic, as well as in the Greek lectionaries. Certain of these suggestions need study and reconsideration. It has nevertheless been shown that this type of reading had an early and widespread existence

More definite conclusions concerning a Caesarean text and its as yet uncertain relationship to the Alexandrian and Western types of text must await more investigation Research in this area has so far been almost entirely limited to a few chapters in Mark But current study has definitely called in question the unity of such a text and has shown the need of distinguishing at least a Caesarean form proper and an earlier Egyptian form, which for lack of a better name has been called "pre-Caesarean." The Lakes had made such a distinction between a "better" form (Θ 565 700 Geo) and a "less good" text (W fam 1 and 13 28 P^{45}). The latter was considered "pre-Caesarean" because P^{45} was older than Origen. Similar distinctions have since been advocated by Ayuso and others, but they need further study, particularly in relation to Origen. It thus appears increasingly probable that the Caesarean text may also be more accurately designated as a textual process than as a definite recension.

Likewise, significant studies of the Syrian or Byzantine text have led to similar suggestions about its character Hort had thought of it as a recension originating in Antioch in the fourth century, and it has often been attributed to Lucian on the probably mistaken interpretation of a statement by Jerome. But recent demonstration of the extremely mixed character of the text of the mass of witnesses (e g., by the

Lakes and E. C Colwell) and attempts to reconstruct its complex history have raised serious doubts about attributing it to any specific time and place.

A most valuable contribution to the reconstruction of its history was made by Herman von Soden in a publication (1902-13) of a new Greek text and apparatus. In this he made an elaborate attempt to create a new classification of witnesses and an extensive apparatus which would include a large number of the late manuscripts. The result has been both the hope and the despair of scholars ever since. Von Soden's often confusing theory was complicated by the introduction of a new nomenclature both for the witnesses to the text and for his group classifications. Thus he distinguished three main types of text H (Eta), attributed to Hesychius, I (Iota), of supposed Jerusalemic origin; and K (Kappa or *Koine,* i e, "common") The first of these is roughly equivalent to the Alexandrian text and needs no special comment The Kappa form is approximately the same as the Byzantine but somewhat more inclusive. The Iota text is represented as a new group, which actually, by virtue of its inclusion of a variety of incongruous elements, corresponds mainly to a combination of Western and Caesarean types of text Von Soden broke it down into a dozen bewildering subdivisions, one of which is even a Kappa sub-group (K^a). Codex Bezae is allocated to I^a, a mixture of I and K^1. Von Soden thought that this text was used by Cyril of Jerusalem, and that it may have been created by Eusebius But his theories and classifications have here been considered especially unsatisfactory.

The chief contribution of the work was in the area of the Kappa text Here some sixteen sub-groups were identified, the earliest one being K^1, itself the ancestor of two chief later revisions, K^r and K^x The latter became dominant from the tenth-eleventh century on, but the most popular early form was K^a, a revision of I by K^1. Codex Alexandrinus, Theodoret, and Chrysostom were considered witnesses to the K^a text in certain areas. Subsequent investigations have substantiated with modifications these main Kappa groupings, and von Soden's apparatus does give us the fullest presentation of the evidence of the late, minuscule manuscripts. Unfortunately the work is marred by many errors in the citation of readings, so that it must constantly be checked The use made of the versions and patristic evidence was

also rather limited and eclectic. This was largely owing to von Soden's rather eccentric theory of the corruption of the early text by Tatian's Diatessaron On this account, for example, the Old Syriac, Old Latin, and early fathers were depreciated, and Tatianic influence was seen in the great amount of variation which characterized that early text (*ca.* A.D. 200), which ought otherwise to be recoverable as the ancestor or archetype of I-H-K by a majority vote. The rejection of what were considered to be Tatian-supported readings actually led, however, to the adoption of a text by von Soden which did not differ radically from that of Westcott and Hort

Along with the otherwise general rejection of his theory and method, von Soden's new scheme of nomenclature was also by-passed. This renumbering of manuscripts had definite merit in that it indicated at a glance the date and content of a document, but under the leadership of C. R. Gregory the Tischendorf system was continued and improved, a revised list of manuscripts being published in 1908 Upon Gregory's death in 1917 the official listing of new materials was carried on by Professor von Dobschutz in the *Zeitschrift fur die Neuetestamentliche Wissenschaft* until his death Professor Kurt Aland of Berlin has now assumed this task for the Greek witnesses

Efforts to reconstruct the history of the Byzantine text have continued. The Lakes contributed much work in this direction, and Silva Lake in 1937 published a study of Family *Pi* and the Codex Alexandrinus, and a reconstruction of the text of Family *Pi* in Mark This family was identified as a group of twenty-one manuscripts headed by Codex Π and roughly equivalent to von Soden's K^a (later I^k) group, but related to Codex A by a common ancestry and prior to it. A similar early Byzantine text for the other Gospels is reported to be ready for publication by the same author

Besides the editions of text by von Soden, Scrivener, and others previously mentioned, several additional publications of the Greek New Testament deserve brief notice. These have generally taken into account the new evidence and the results of study in the field However, they are more or less of the same type of text as Westcott and Hort, with here and there a certain amount of variation, usually in the direction of the Textus Receptus readings Bernhard Weiss published a study and edition (1894-1900) in which he gave much attention

to intrinsic evidence and largely supported the Beta text. Beginning in 1898 Eberhard Nestle published an inexpensive edition for the Stuttgart Bible Society, the text of which was at first based on the majority reading of Westcott-Hort, Tischendorf, and Weymouth, Weiss being substituted for Weymouth in the third edition. The British and Foreign Bible Society in 1904 replaced its Textus Receptus with the Nestle text On the death of Nestle in 1913 the work of editing was carried on by his son, Erwin Nestle, who added a brief apparatus of the most important evidence. This text has had a very wide usage, and a twentieth edition was published in Germany in 1950 The apparatus is continually revised to include new evidence of importance. A manual edition of Tischendorf was issued by Gebhardt in 1902. In 1910 Alexander Souter published the revisers' Greek text with a brief critical apparatus. A second edition of it was issued in 1947 by the Clarendon Press, with a revised apparatus.

Some significant Roman Catholic contributions have also appeared recently H. J. Vogels in 1920 (third edition, 1949) issued a text similar to Nestle's in character and format, but with somewhat more Latin and Syriac evidence in the apparatus In 1933 A. Merk published a comparable edition for the Papal Biblical Institute which has had a wide usage by Roman Catholic scholars. The apparatus was unfortunately marred by many errors, but later editions (seventh, 1951) have corrected many of these. The text is more Byzantine than Westcott-Hort. The Spanish scholar, Joseph M Bover, brought out a Greco-Latin text in 1943 (second edition, 1950) whose apparatus cites a good many minuscule manuscripts. The evidence is cited by groups, and again the text departs frequently from the Westcott-Hort type, sometimes in the direction of other non-Byzantine texts Of the Vulgate Bover writes that *eam tamen mutare non audebamus* ("yet we did not dare to change it")

Recognition of the need for a new, full, and up-to-date critical apparatus—a need not adequately filled by the von Soden edition—led in the early twenties to the initiation of a British-German project for the publication of a "new Tischendorf." Because of differences of opinion, especially with regard to what text to print, the British proceeded independently. Under the editorship of S C E Legg a committee of scholars prepared and published the Gospels of Mark (1935)

and Matthew (1940) The text of Westcott-Hort was printed, and with some exceptions the edition presented the fullest critical apparatus to date. However, it was still found to be unsatisfactory in completeness, consistency, and accuracy of presentation. No attempt is made, except in limited instances, to give or symbolize related witnesses by groups. In 1948 the resignation of Professor Legg as editor led to a reconsideration of the scope and execution of the work and to overtures for co-operation with scholars who had meanwhile initiated similar undertakings in America The result has been expansion of the project to one of international scope with two main centers of work, Oxford and Chicago. Publication of Luke is the first objective.

Among publications of individual books of the New Testament mention should be made of the huge two-volume edition of the Apocalypse by H C. Hoskier issued in 1929 after ten years of preparation. This gives the most complete extant apparatus to the book, consisting of about 230 manuscripts divided into ten groups. But the designation of the manuscripts by Scrivener's instead of Gregory's numbers is a drawback to its ready use. Weiss, Bousset, von Soden, R. H. Charles, and Josef Schmid have also contributed studies bearing upon the text of Revelation. In his Commentary on Romans (fourth edition, 1933) H. Lietzmann gives a brief but valuable introduction to the textual criticism of the Pauline Epistles, a relatively neglected area. Important work on Acts was previously mentioned (pp. 213-14). Albert Huck's Synoptic Gospels Harmony (revised edition by Lietzmann and Opitz) provides a good apparatus of readings by classes and groups of witnesses. The continuing collation of manuscripts is exemplified by the work of the Lakes, Goodspeed, K. Clark, and others and will receive a new impetus from the "new Tischendorf" project. General introductions of merit have come from Gregory, Nestle, Jacquier, Kenyon, Lake, Souter, Vogels, Vaganay, and Lagrange. The reader is referred to these and to the Bibliography for information on the many other contributions which have been made in every area of the subject In such a brief survey as this a large number of workers must remain unhonored and unsung.

In conclusion something should be said of current theory and practice We have briefly reviewed the development of various "rules" of procedure in textual criticism in connection with our sketch of

its history. Certain of these have proved of undoubted value, and some, indeed, have become axioms. A summary of those of most importance would run somewhat as follows.

1 The age of the text of a manuscript is more significant than the age of the manuscript itself
2 Readings supported by ancient witnesses, however, especially from different groups, are generally preferable
3. The reconstruction of the history of a variant is basic to judgment about it.
4 The quality rather than quantity of witnesses is more important in determining a reading.
5. Identity of readings, particularly in errors, implies identity of origin.
6 The shorter reading is generally preferable
7. The more difficult reading is generally preferable.
8. Readings which bear the earmarks of stylistic or other improvements are suspect
9. Readings which bear the earmarks of doctrinal controversy are suspect.
10 Variants combining the appearance of improvement with the absence of its reality are suspect
11 The reading is preferred which best suits the author's characteristic tendencies.
12. The reading is preferred which best explains the origin of all other variants in a given passage.
13. In parallel texts differing readings are preferred.

These "rules," however, must naturally be employed together, and, in fact, it will be seen that several of them overlap Always to adopt the shorter reading, for example, would make no allowance for accidental omission and might eventually result in no text at all! Always to adopt the harder reading would result in an unintelligible text. There is a current tendency, therefore, to reduce all such "rules" to a minimum summary statement along the line of what we have given in numbers 11 and 12. The reading is preferred which best suits the context and which best explains the origin of all other variants. This kind of statement also makes clear that a subjective element is inevitably present in judgments upon a reading And while efforts to study and reconstruct the external evidence will continue as a basic necessity, it has also become apparent that any attempt to determine

the text which existed anterior to that of our third- and fourth-century witnesses will involve an increased measure of rational criticism

Over two centuries ago William Mace observed that "There is no manuscript so old as common sense"; and, more recently, in their study of the Caesarean text, Lake, Blake, and New declared that "Ultimately all intelligent criticism is subjective." What this means is that the critic who would restore the most ancient text must needs be a philologian, historian, and theologian He must be equipped not only with a knowledge of the sources of the text, including the language and idiom of it and its authors and of the important early versions, but also with the knowledge and comprehension of the events, institutions, and doctrines of the period, both pagan and Christian. The line, in other words, between "lower" and "higher" criticism has become very thin or has often ceased to exist. The student of the text has to deal with documents whose variant readings are like hundreds of facets reflecting the interests and thoughts of the Christian churches and their members, from exalted leaders to humble scribes

Aside from this rather disconcerting situation, the mere existence of such an enormous number of variations in the text of the New Testament has continued to startle many Christians They fear that the whole question of the discovery of the true text is thrown into hopeless confusion. In one sense they may be right, the exact autograph text may never be recovered in every detail On the other hand, the multiplication of witnesses and variants attests the tremendous importance of the New Testament in the early centuries and really guarantees the general integrity of its text. Only 400 or so of the 150,000 variants materially affect the sense, and of these perhaps 50 are of real significance. But no essential teaching of the New Testament is greatly affected by them. Modern study of the text has contributed, it is true, to the undermining of certain theories of verbal inspiration which once existed. For it has helped to show that the spirit rather than the letter was of primary importance in the early transmission of the text, even as the apostle Paul long ago pointed out. But the work of textual criticism will go on so long as it appears possible to recover an older text than we now possess for the basic document of the Christian faith, the Greek New Testament.

PART THREE

The English Bible

CHAPTER XVII

Early English Manuscripts

CHRISTIANITY was introduced into Great Britain as early as the second century. Its progress was comparatively slow before the sixth century, but in Ireland it had taken deep root. This Irish acorn grew to immense proportions, until in the sixth century it extended to Scotland and northern England, where the invasions of the Teutons had largely crushed out earlier gains The landing of Augustine at Kent, in A.D. 597, gave a new lease of life to the struggles of the few remaining Christians. The vigorous efforts of that giant saint soon pushed the gospel to the front. In spite of his rather irascible temper and occasional unwise movements, Christianity made notable advance, particularly in southern England. And by the loyalty of one of his own converts special favors were granted to missionaries in Northumbria.

Almost the entire progress of Christianity throughout Great Britain came about through the active preaching of the gospel Few could read, and there were fewer copies of the Bible to be read Therefore the most effective and rapid method of spreading the good news of the Kingdom was through the heralding of the truth by the missionaries of the Christian church The mingling and commingling of languages on the isles of Britain placed a barrier to the early translation of the Bible into anything that could be popularly recognized as the one language of the country The version of the Bible in use was, of course, the Latin; and the preachers who traveled everywhere declared the truth in the tongues of their listeners These preachers were usually the educated monks, or their pupils, who were able to interpret the Latin Bible to their auditors.

The earliest beginnings of the English Bible are apparently to be dated about the middle of the seventh century The great Anglo-Saxon scholar, Bede, has preserved for us a story of a certain Caedmon with a gift for poetical paraphrase, who about that time composed verses

on a variety of Biblical subjects from the creation of the world to the spread of the early church. Colorful legends are related about him but dependable information is meager. Even the few samples of his verse that have survived are admitted to have been worked over by later hands While his poetry is in no sense a translation, it merits attention as the first known attempt to render Biblical materials into Anglo-Saxon; it is one of the forerunners of our Bible of today.

South England at about the same time was receiving religious instruction through popular poetry attuned to the harp of Aldhelm, Abbot of Malmesbury. This shrewd official observed that the usual sermon had little attraction for the ordinary run of Englishmen. Being a skillful musician, he put on the garb of a minstrel and took up a position on a bridge over which many people were obliged to pass. His artistic playing soon attracted a group of listeners As soon as he had thus collected an audience he gave his music and words a religious turn, and by the strains of his splendid instrument and the persuasive form of his attractive language won many to Christianity.

This same Aldhelm, later Bishop of Sherborne, who died in 709, was the first known translator of the Psalms into Anglo-Saxon English. There is a manuscript in Paris which is thought by some scholars to be the Psalter of Aldhelm; but this document was written in the eleventh century, and bears marks of a later time. About the same time, it is thought, and at Aldhelm's request, Egbert, Bishop of Holy Island, produced a translation of the Gospels. Of this work there is a copy in the British Museum.

The most renowned Christian and scholar of this period was Bede, born about 673, died 735. He is called the brightest light in western Europe in the eighth century. He stands at the head of the long procession of translators of the Bible stretching from the eighth to the twentieth century One of his followers, Cuthbert, has left us the story of the death of this good old monk of Jarrow All through the day before Ascension Day, A D. 735, he had been dictating his translation of the Gospel of John For he said, "I do not want my boys (monks) to read a lie, or to work to no purpose after I am gone." By evening only one chapter remained untranslated The great scholar seemed very near to death. All day, although in mortal weakness and interrupted by farewells to brethren of the monastery, he had painfully translated on.

As evening approached, his sobbing scribe leaned over and whispered, "Master, there is just one sentence more." and he said, "Write quickly." The scribe wrote on, and then said, "See, dear master, it is done now." "Yes, you speak truly; it is finished now." Then, by his request, they laid him down on the pavement of his cell, and he departed with the "Gloria" on his lips, to be with the dear Master whom he had so faithfully served during a long and devoted life Of this translation, however, there is no trace left It is supposed that it perished, with many other treasures of Northumbria, when the country was laid waste by the Danes The source of the translation remains uncertain. One naturally thinks of the Latin Vulgate, which was then the Bible of all western Europe. But Bede had some knowledge of Greek; if he actually worked from the original, his translation takes on still greater historic significance. Further, his profound influence upon the Christianity of England in its formative period may not be overlooked. It is a reasonable inference that all four Gospels had now been translated

One of the greatest patrons of religion and Biblical learning in these centuries was King Alfred (848-901). His name stands with the best of England's kings, as one who planned and promoted the intellectual and moral well-being of his subjects. Christianity was on the wane, but he quickly instilled new life into it and gave the use of the Bible a new impulse. He was so convinced of its genuine value that he translated, or caused to be translated, and placed at the head of the laws of his country, a copy of the Ten Commandments; to these he added other laws from the Pentateuch. His activity did not cease here, for he seems to have regarded himself as one in the succession of Aldhelm and Bede. He is said to have been instrumental in the production of a translation of the Psalter. There is no known copy of this work in existence, though a manuscript in the British Museum carries the name, King Alfred's Psalter. It contains the Latin text with an interlinear English translation but is now generally conceded to belong to the eleventh century. There is, however, another Latin Psalter in the British Museum, thought to have been written about A D. 700, which was supplied with a word-for-word translation in the dialect of Kent about the close of the ninth century.

This same period is thought to have produced our earliest surviving translation of the Gospels into English. One would suppose that the

Gospels would have been first to be translated, but, apart from that of Bede, no known version is older than the Psalter just mentioned. One of the Cotton manuscripts in the British Museum is a Latin version of the Gospels copied toward the end of the seventh century by Eadfrith, Bishop of Lindisfarne, from a text which Adrian, friend of Archbishop Theodore, had brought to England in 669. About 950 Aldred, a priest, prepared and wrote between the lines of this Latin text his Anglo-Saxon paraphrase. This is the earliest known version of the Gospels in the English language; but its dialect is that of Northumbria. This text is now known by the names of "The Lindisfarne Gospels," "The Book of Durham," and "The Gospels of St. Cuthbert." The manuscript is famous for its magnificent illuminations of the text.

The Bodleian Library at Oxford possesses another interlineated copy known as "The Rushworth Gospels," which had its origin a little later. The translation was done in Yorkshire, although the manuscript in which it is preserved is supposed by some to have been written in Ireland. The translation through Mark, Luke, and John is believed to have been derived from the Lindisfarne version, but that of Matthew is in a different dialect. The manuscript takes its name from Mr. John Rushworth, in whose possession it was for many years He served as Deputy Clerk of the House of Commons during the Long Parliament.

The Latin text used in all these interlinear versions was not that of the Vulgate but of the Old Latin, already described in Chapter V.

The earliest copies of translation of the Gospels, with no accompanying Latin text, are of the tenth century. Six such copies are known varying slightly the one from the other. Of these, two are found in each of the libraries of Oxford, Cambridge, and the British Museum. The oldest of them, at Cambridge, was written at Bath about A.D. 1000. The variants of these manuscripts are so slight as to indicate a common original from which they were all copied; that is, the evidence indicates a single Anglo-Saxon translation of the Gospels. Some of these copies, however, carry glosses in the Northumbrian dialect

In this same latter part of the tenth century, which was notable for its revival of learning in England, the Abbot Aelfric wrote many homilies and translations. His style was clear, as fitted work for general readers. In the homilies he summarized, or rendered freely, the contents

of considerable portions of the Books of Judges, Kings, Job, Esther, Judith, and the Maccabees, but also translated the greater part of the Hexateuch, omitting only material that would not be of general interest, such as details of the ritual legislation and lists of names. Judith and Maccabees seem to have been included to fire the patriotic spirit of his countrymen against the invading Danes One of the interesting phases of Aelfric's work is that he made use in his translation, so he says, of older versions. Thus far, however, no such works have been discovered. The lack of any such versions today may be due to the terrific destruction which the Danes visited upon the country, and to the devastations of the Normans. Of Aelfric's work there is one manuscript in Oxford and one in the British Museum.

In 1066 the Normans conquered England. Their invasion meant the dethronement of the Anglo-Saxon language and the substitution therefor of the Anglo-Norman. The former was ostracized from the court, from books, and from schools. It was turned out of doors by royal decree, to find a refuge only with the cloistered monk, the priest, and the peasant. But its flavor could not be entirely destroyed. The new language, brought in by the conquerors and authorized by royal edict, slowly but gradually percolated the conquered realm. The resultant confusion of tongues prevented the production of anything that could claim the name of literature until the thirteenth century. All activity, too, in the production of Bible translations became nearly extinct during this period

But we have one notable piece of Scriptures from the early part of the thirteenth century (1215). An Augustinian monk by the name of Orm made a metrical version of parts of the Gospels and the Acts for use in church services, which is known today as "The Ormulum." This version is not a translation but a paraphrase, accompanied with brief explanatory notes, designed for use in that day The language is a peculiar compound. The vocabulary is Teutonic, but its cadence and syntax are colored by Norman characteristics. The Ormulum is preserved in a fine manuscript of 20,000 lines in the Bodleian Library at Oxford. It seems to have been easier to make a paraphrase than a translation in the early thirteenth century Following the Ormulum someone put Genesis and Exodus into verse for general use.

A little later, an unknown author produced a version of the Psalter,

metrical in form and almost a translation in its faithfulness to the original. It is curious, and yet explicable, that there was no real translation-version of any book of the Bible after the Norman conquest until about the middle of the fourteenth century, except of the Psalter. Of it there were two prose translations that require special notice in any discussion of this period So general was the use of the Psalter, and so universal its appeal, that for more than a century it seems to have almost monopolized the attention of leading Christian scholars and evangelical authorities One notable translation sprang up in southern England, and the other in the north The translation attributed to southern England is credited to the skill and scholarship of William of Shoreham, in Kent, and located in time about 1320. This man Shoreham was a poet of no mean proportions. His poems are in the Kentish dialect, while his Psalter is in the dialect of the West Midlands. The northern England translation was produced about the same period by Richard Rolle, the so-called "Hermit of Hampole," near Doncaster, in Yorkshire. In Rolle's translation each verse is followed by a commentary in order thereby to make it of the utmost value to the common preacher of his day, who might not completely understand the significance of the translation. The original from which they translated was the Latin Vulgate, and their work furnishes us today admirable specimens of the English language of that time

The time of the work of these two Biblical scholars falls before the middle of the fourteenth century. Some students say 1320 for William of Shoreham and 1340 for Richard Rolle In other words, their translations were completed, distributed, and in full use about the time of the birth and youth of Wycliffe, about 1320-40 These translations of the Psalter, widely known in England, created a thirst for larger portions of God's Word and thus prepared the soil for the great service of Wycliffe, whose work will engage us in the next chapter.

The spread of the Shoreham-Rolle versions of the Psalter was the beginning of the triumph of the English language proper. The old Anglo-Saxon gradually faded out before the newcomer, which was given grace and favor through the Psalms that were so well beloved by the people at large. Political concessions to the common people had opened up before them the beauties of a liberty and independence

that filled life with a new impetus and new inspiration. The production of such English literature as that of Langland, Gower, and Chaucer presented a new side to the life of the awakening Englishmen of the fourteenth century. These productions, together with the Psalters already noted, stirred up the appetitie of the English nation intellectually and religiously, so that Wycliffe, by his mental and religious instinct, could rightly divine the moment when a new translation of the Bible would satisfy the intellectual and spiritual hunger of a people.

CHAPTER XVIII

Wycliffe's Version of the Bible

JOHN WYCLIFFE stands out as one of the most illustrious figures of the fourteenth century. He was born in Yorkshire about 1320, and completed his education at Oxford He is said to have become Master of Balliol College, and to have won a high place among the scholars of his day. In 1361 he resigned the arduous post of Master, and settled on a living at Fillingham, Lincolnshire. This mode of life gave him more leisure for the production of pamphlets and addresses on the stirring questions of those troublous days. With Oxford and its attractive circle of scholars close at hand, Wycliffe became deeply interested in the great ecclesiastical controversies of the times. His own personal knowledge of the conditions and needs of the common people, as seen among his parishioners, and his thorough acquaintance with the intellectual life of Oxford, prepared him for doing a large service for the people of his day. Wycliffe's public life may be divided for convenience into three periods (1) his education and training at Oxford, and the beginning of his ecclesiastical activity (1336-66), (2) his semi-political and anti-papal, as well as purely ecclesiastical, work (1366-78); and (3) his open war against Rome, and his preparation from the Latin Vulgate of a translation of the Bible for the common people (1378-84).

The fourteenth century was a period of transition It was neither the Middle Ages nor the Reformation It was a kind of middle ground between the two. Politics, society, and the church were struggling to hold on to the old order, and at the same time to make friends with new thoughts, ideals, and progress. The Hundred Years' War with France was in progress and brought on the country all the countless fruits of such bloody struggles The papal quarrels at Rome, and lavish expenditures, had so depleted that central ecclesiastical treasury that the Pope made demands on England for funds. Parliament re-

fused to accede to such orders, and Wycliffe stood by the government. The immense wealth of the great dignitaries of the church and the organized corporations through which they constantly added to their accumulations were the objects of some of Wycliffe's most determined assaults.

The power of his attacks lay not so much in his enthusiasm as in the purity, spirituality, and unselfishness of his character, in his determination to crush the wrong and enthrone the right, and in his broad views on the questions of the day and the best method of solving them in the interests of the common people as over against the oppressions of church and state

Wycliffe had reached middle life before he struck the keynote to his great lifework. In 1366, when he was forty-six years old, he publicly justified and approved Parliament's action in refusing to hand over money at the demand of the Pope. This act soon drew him into the center of the fight against Rome. In 1371 he was the most prominent reformer of the religious and social forces in England. Papal encroachments, and abuses of wealth in church quarters were vigorously exposed and resisted. As an inspiration to him, Wycliffe had the University of Oxford at his back, except when he promulgated some doctrine distinctively heretical. Since Oxford had become, or was popularly regarded as, the center of liberalism in thought for all Europe, Wycliffe could cut a wide swath without losing its moral support. With keen, logical argumentation he met and defeated his papal opponents He had no peer in the lecture hall or the pulpit, and was the terror of the corruptionists and the promoters of the papal church But Wycliffe's logic and metaphysics, his scholasticism and political views, are not the outstanding characteristics for which he is most remembered and honored in the church today. These were only elements of his symmetrical mind that helped him to divine the crying need of his times He perceived that there was a gulf between the common people and the church authorities, and that it should be bridged; that they should be brought together on the Word of God. He saw, too, that the surest method of defeating Rome would be to put the Bible into the hands of the people. The version current in that day, except a few scattered fragments from earlier centuries, was

the Latin Bible. Only the learned could use it, and those responsible for teaching the common folk were recreant to their task.

Wycliffe "came to the kingdom for such a time as this." He saw that the true emancipation of the soul of man lay in his opportunity to read the Bible in his own tongue, in his own home, that such a reversal of the prevalent condition of the people would mean the loss of Rome's power. This realization led Wycliffe to turn his whole attention to the work of putting the Bible into the language of the everyday man and woman—the common people who had looked for their spiritual nourishment to a careless, indolent, and haughty priesthood Wycliffe had already shown himself to be an open antagonist of the methods and officials of the church; and this new undertaking made him still more unpopular, he became an object of attack by the influential ecclesiastics of England. Though a schoolman, Wycliffe laid supreme emphasis on the Scriptures as a basis for religious life, and thus had no hesitation in throwing the weight of his energies into the production of a version of the Bible that could be read by the simplest peasant

Wycliffe's objective was a translation of the Latin Bible, or Vulgate, into the English of his time Just when and where work began is not known. But the New Testament was finished about 1380; and within two years (in 1382) the whole Bible appeared in English dress Wycliffe, of course, did not do all the work himself. Indeed, his personal share in the actual work of translation is uncertain, but the impulse of his leadership, at least, was of vital importance As rector of Lutterworth, in Leicestershire, he sustained close relations with the great centers of intellectual and spiritual thought, particularly at Oxford and London He called into service other scholars whose sympathies and abilities were in accord with his own. Ample evidence is at hand to show that most of the Old Testament work was done by one of his devoted disciples and fellow workers, Nicholas of Hereford. There is a manuscript now in the Bodleian Library, at Oxford, which was doubtless written under the direction of Hereford; it breaks off in the middle of Baruch 3·20, which point some suppose to indicate the time when Hereford was suddenly summoned to London to answer the charge of heresy In any case, the rest of the translation was done by another scholar, some believe by Wycliffe himself, but

this is doubted on the grounds of his frail health in these later years and his activity in other matters.

As a practical part of his efforts for reform, Wycliffe organized a sort of religious order of poor, though not mendicant, preachers, whom he sent abroad through England teaching his doctrines. The completion of the translation of the Bible provided them with new and most valuable equipment for their evangelism, and the combination of the preaching of these Lollards, as they were called, and their spread of this the first English Bible, exerted a profound influence on English life through the fifteenth century. They were voluntary workers, not church clergy, but co-operated, when possible, with the clergy. If the church authorities opposed them, they carried on their work independently, and with all the vigor of their consecrated leader, Wycliffe The movement spread so rapidly that one of his sharpest opponents said, "You cannot travel anywhere in England but of every two men you meet one will be a Lollard." This illustrates the immense popularity that soon greeted Wycliffe, and made him the chief advocate of personal religion and of loyalty to the Scriptures. This fact, too, gave him great influence with the church authorities, and made him the most successful reformer on English soil. The success of his translation marked the first serious defeat for the church's complete control of the people of England, it marked, too, a notable achievement in the long story of English literature.

Wycliffe did not live to see the best fruits of his translation. Two years after its completion in 1382, he died of a stroke of paralysis brought on by continuous and heavy work But he had planted a tree whose fruits, spiritual and literary, were to be the joy and the exaltation of the common people down through the centuries

This first edition of the Wycliffe Bible was far from satisfactory Hereford's style was stilted, his translation mechanical, and his language a Midland dialect not representative of the central strand of development in English The version called for revision; and not long after Wycliffe's death, it seems, the work was undertaken Apparently it continued through many years. Manuscripts of parts of the revised translations are ascribed to the years just before or just after 1400. But the oldest manuscript of the complete work bears the date 1408. It is not known definitely who did the work, but it has been

attributed, in part at least, to John Purvey, Wycliffe's former curate at Lutterworth. The prologue tells us on what principles the revision was made, but omits all names of revisers, except to say that the writer was "a simple creature." A few lines out of this prologue in modern spelling read:

> Though covetous Clerks are mad through simony, heresy and many other sins, and despise and impede Holy Writ as much as they can, yet the unlearned cry after Holy Writ to know it, with great cost and peril of their lives For these reasons, and others, a simple creature hath translated the Bible out of Latin into English First, this simple creature had much labor, with divers companions and helpers, to gather many old Bibles, and other doctors and common glosses, and to make a Latin Bible somewhat true, and then to study it anew, the text with the gloss, and other doctors, especially Lire [Nicholaus de Lyra] on the Old Testament, who gave him great help in this work.

This prologue shows that the "simple creature" attempted to establish a Latin text on the basis of all the Latin versions and authorities that he could consult, and then to translate his corrected text—a good case of textual criticism in operation.

The revision soon took the place of the first translation. Within less than a century it became the regular edition of Wycliffe's Bible Its popularity grew rapidly. It was eagerly sought for, and large sums were paid for it by the rich Multiplied by transcription only, a copy was worth a great deal of money Early in the fifteenth century a complete copy would have brought, in our money, about one hundred and fifty dollars. Foxe records, 'Some gaue a lode of hay for a few chapters of S. James or of S. Paule in English' Wycliffe's Bible was proscribed by Archbishop Arundel in 1408, when he made it a penal offense to read any of Wycliffe's writings or translations within the province of Canterbury In 1414 a law was enacted that all persons who should read the Scriptures in the mother tongue should "forfeit land, catel, lif, and goods from their heyres for ever." Such prohibition could not smother the fire. There are now about one hundred and seventy known manuscript copies of Wycliffe's Bible Of these less than thirty contain the original translation of 1382, while the remainder are copies of Purvey's version—all written before 1430 Many of these copies were written in a small hand without ornamentation, and were used by private individuals or in families. Some of the finest copies known have been traced to the possession of such royal personages as

Henry VI, Henry VII, Richard, Duke of Gloucester, Humphrey, Duke of Gloucester, Edward VI, and Queen Elizabeth.

Notwithstanding its great popularity in the fifteenth century, the Wycliffe Bible existed until recent times in manuscript only. The reasons for this become evident on brief consideration. Printing was unknown in Wycliffe's day; it will be recalled that Gutenberg's revolutionary achievement occurred after the middle of the following century, and more than eighty years after Wycliffe's death. And by the time printing had become somewhat common, the newer English translations, which we are to consider in our next chapter, were attracting general attention, with the result that Wycliffe's Bible gradually passed out of use, although as late as 1520 it was adapted for use in Scotland. It had served wonderfully its day; it had made a profound contribution to English life. But its day was short Yet doubtless Wycliffe himself would have been the one most gratified in the outcome, for after his Bible had prepared the way, it gave place to the better versions of the sixteenth and seventeenth centuries Yet we must beware of concluding that thus Wycliffe's work was superseded. On the contrary, his rich achievement was poured into English life, and manifested itself in growing enlightenment and in the struggle for human freedom in which England so remarkably gave leadership to the Western world, it lives to this day in the truth to which Wycliffe gave himself without stint He merits fully the epithet commonly given him, "the morning star of the Reformation" Nor may we overlook the importance of his translation in the history and evolution of the English language The various dialects of his time found in his Bible a common expression and, in its dissemination and the preaching of the Lollards, a unifying medium that crystallized the long evolution and intermixture of Norman and Anglo-Saxon into English: early English, it is true, but still the direct antecedent of our speech of today.

After an interval of centuries, Wycliffe's Bible was at length printed. His New Testament, in the Purvey version, was published by Lewis in 1731, again by Baber in 1810, and a third time in Bagster's English Hexapla in 1841. Of the Old Testament the only part printed prior to the middle of the nineteenth century was the Song of Songs published by Adam Clark in his *Commentary* in 1808. The original Wycliffe

version of the New Testament was published by Lea Wilson in 1848, but at length in 1850 the entire Bible, in both the Wycliffe and the Purvey versions, was published in the now-famous edition of two English scholars, Forshall and Madden. They spent twenty years on the task, making use of 170 manuscripts, and published their results in four large quarto volumes that bear the title *The Holy Bible, containing the Old and New Testaments, with the Apocryphal Books, in the earliest English Versions made from the Latin Vulgate by John Wycliffe and his followers, edited by the Rev. J. Forshall and Sir F Madden.*

The production of the first translation of the whole Bible into English for the use of the common folk of England thus came about through the foresight, insight, and energy of John Wycliffe. Dr. (subsequently Cardinal) Gasquet, an English Roman Catholic scholar, in 1894 challenged the authenticity of the Bible attributed to Wycliffe; but the evidence in favor of the great reformer's having originated and carried through this work is too specific and convincing to admit of such doubt His translation was made, it is true, not from the original languages of the Bible, but from the Latin Vulgate current in England in his day. Nevertheless, it opened the secrets of the divine Word to all who could read; and it gave preachers and teachers an unfailing source of divine truth to set before those who could not read it for themselves. Wycliffe's work, and that of his co-laborers, has indelibly stamped itself on our present-day Bible. Some of the permanent words and expressions that are first found in his version are "strait gate," "make whole," "compass land and sea," "son of perdition," "enter thou into the joy of thy Lord" Some compact methods of expression also have remained with us· "I wente, and waisehid, and sai" (John 9 11); "all things ben nedeful to me, but not alle thingis been spedeful" (1 Cor. 6·12).

It will doubtless be of interest to compare the language of King Alfred's day (870-901) and of Wycliffe's time (1382), with our own —three periods roughly five hundred years apart Three versions of the Lord's Prayer provide a convenient means of such comparison; they are given here, line by line, in first the Anglo-Saxon translation of Alfred's time, then Wycliffe's version, and last the American Standard Version:

Uren Fader dhic art in heofnas
Our Fadir that art in heuenes
Our Father who art in heaven

Sic gehalyed dhin noma
Halewid be thi name
Hallowed be thy name

To cymedh dhin ric
Thi Kingdom comme to
Thy Kingdom come

Sic dhin willa sue is in heofnas and in eardhs
Be thi wille done as in heuen so in erthe
Thy will be done, as in heaven, so on earth

Vren hlaf ofer wirthe sel us to daeg
Gyve to us this dai oure breed ouer other substance
Give us this day our daily bread

And forgef us scylda urna
And forgive to us oure dettis
And forgive us our debts

Sue we forgefan sculdgun vrum
As we forgyven to oure dettouris
As we also have forgiven our debtors

And no inleadh vridk in costung
And leede us not in to temptacioun
And bring us not into temptation

Als gefrig vrich fro ifle
But delyvere us fro yvel
But deliver us from the evil one.

CHAPTER XIX

Tyndale's Version of the Bible

THE fifteenth century was one of the great epochs of human history. Profound forces were stirring into a vigorous life that was soon to transform the culture of Europe and lead the way for the wonders of our own times Feudal society was breaking down; new cities were arising and all were growing in population. Their enterprise and their spreading commerce were bringing about conditions for which older social forms were insufficient, and previous structures of thought gave little direction. The Roman Church, which had been the guide, and too often the despotic ruler, of all western Europe was showing itself inadequate to meet the problems of the time Its rigid thought forms and established system of dogmas could not adapt themselves to the intellectual forces which from the thirteenth century onward had been growing in vigor. The activity of Wycliffe, discussed previously, while of far-reaching influence was yet but a symbol of the uneasy stirring of men's minds in many lands under the tyranny of the church.

This awakening, commonly known as the Renaissance, manifested itself first in Italy under the leadership of certain thinkers and writers of that country Its progress was greatly enhanced by a series of notable events that occurred from about the middle of the fifteenth century onward and made of this "new birth" the primary fact of the thinking of western Europe Far-reaching changes came about which in the course of a few decades created nothing less than a new world of the mind, a revolution comparable alone with that effected by scientific advance during the nineteenth century.

In part, progress was won at the price of human agony. In 1453 the Turks captured Constantinople The victory was accompanied by much brutality, as was inevitable in those days—and war has not become gentle even yet! Numbers of scholars fled westward to find refuge

in the various countries of Europe. They were in themselves a sort of physical link with the culture of the ancient world. But, too, their familiarity with the classical literature, as well as the westward movement of classical manuscripts which their migration stimulated, became of the highest significance for the reviving culture of Europe. A similar exodus at the end of the century had comparable influence. In the very year from which the Western Hemisphere dates its history, in A.D. 1492, Ferdinand, King of Spain, who with his Queen, Isabella, is honored for support of the epochal venture of Christopher Columbus, expelled from his dominions the entire Jewish community of some 300,000 persons. And five years later the same tragedy overtook the Jews of Portugal, except only for a few timorous souls who went through a form of submission to an alleged Christianity. These homeless wanderers, selling their knowledge, since they had no other resource between them and destitution, became teachers of numerous famous men and stimulated a widespread interest in Hebraic studies. Indeed, the beginning of Hebraic scholarship among Christians in the modern world dates from this time, notwithstanding some prior desultory interest chiefly in the thirteenth century. The stimulating effect upon the intellectual life, first of Italy and then of Germany, France, and England, was scarcely less than that of the revival of classical scholarship a half-century earlier.

The "new birth" was not, however, restricted to the humanities; an intellectual awakening so profound must inevitably affect all aspects of life. The springs of modern science lie within this pregnant time. The names of Leonardo da Vinci and Copernicus will suffice to suggest what was taking place. Both lived through the latter part of this century. Later came Galileo, Francis Bacon, and Kepler. But this is only part of the story, for we must bear in mind that geographic discovery also is science, and it was a scientific theory that impelled the venture of Columbus, which must certainly take a high place among the amazing events of this remarkable time. Can we by an exercise of imagination sense the revolutionary nature of the voyages he initiated? The tight little world of medieval times, centered on the Mediterranean Sea almost as completely as the civilizations of antiquity, and only half-aroused by the travels of Marco Polo to the vast expanses of Asia and the civilizations of the Far East, suddenly discovered itself

to be a mere accident, as it were, on a world of immensity and of untold mysteries and riches—on a globe, moreover, which men could and did sail right around and return to their original haven without ever retracing their course! What a ferment of excitement, what stirrings of adventure, what sense of enlargement in a new age of unimagined possibilities, as one bold navigator after another set forth in his absurd cockleshell of a ship to toss for months in its confined quarters on the might and mystery of uncharted seas. Across the Atlantic they went, feeling out the contours of the American coasts, round the Cape of Good Hope to the fabled "wealth of Ormus and of Ind," through the Straits of Magellan and into the immensity of the Pacific, and on and on! They brought back with them, it is true, gold of the Spanish Main and "ivory and apes and peacocks" of the Far East, but a far more precious cargo as well. Those little ships carried home a new world of man's mind! Medievalism was dead, except as its ghost walks in every age with dire menace to human liberty. The modern world had begun

But this was not the total of this amazing period's bequest of treasure. In 1453-56 Gutenberg printed the Bible, a Latin Bible, it is true. But however fitting it was for him to issue first an edition of this great version which had profoundly influenced the culture of western Europe for a thousand years, the essential fact is that he printed a book. He could not have realized—even the most thoughtful of his contemporaries could not have realized—the significance of his achievement. There have been few inventions in all the ages since the evolution of systems of writing that have so profoundly affected human culture. One thinks of the place of the printing press in our days, perhaps with some sense of the evil as well as the good it accomplishes But of vastly more meaning than the newspapers and magazines of varying worth that pour without cessation their torrent of words upon us, and a whole world away from the tawdry "best sellers" baited with salacious episodes to lure away the public's dollars, is the fact that the art of printing has made possible a vast increase in knowledge and has actually expanded the scope and accuracy of human thinking.

The fifteenth century quickly awakened to the advantages of Gutenberg's invention Within a few decades printing became widely practiced. We have already noted the enthusiasm with which Jewish

leaders accepted it, as well as their steadily growing use of it from 1477 onward, when apparently the first printed Hebrew books appeared the Psalter, and the commentary of Gersonides on Job A listing of Hebrew incunabula runs to more than eighty items published prior to the close of the century, with, indeed, ten of them vaguely said to date before 1480 The practice of printing spread rapidly. Gutenberg himself, even before the publication of his first Bible, came into acute difficulties through a creditor who seized his press and set up a rival publishing house But soon famous printing firms were established in many of the countries of Europe, from Spain and Portugal to Turkey Most famous of them were the presses of Venice, which enjoyed the patronage of the Doge. English printing began with William Caxton in 1470 Before 1500 a total of ninety-two editions of the Latin Bible alone had been issued by these various firms But impulse was given, also, to translating and printing of the Bible in many of the chief languages of continental Europe. A German Bible was printed in 1466 The Waldensian Bible in manuscript was already old, and it exerted an influence upon the Bohemian and the Italian translations The Spanish version was notable, for in the Old Testament it was made direct from the Hebrew, not from the Vulgate as were the others.

The period was to witness yet one further remarkable development in matters of the human spirit Heir as this was of all that had gone before, it yet transcended all in its far-reaching significance. This was the Protestant Reformation It may be surveyed as just one more of the great movements which were so effectively changing the entire aspect of the world. But we fail to grasp its deepest meanings unless we see it in perspective of age-long human aspirations One of the threads running through history has been what we may call the struggle for the freedom of the human soul Since remote prehistory individual man has been oppressed by vested interests having social, economic, or political power. But strange to relate, organized religion has all along provided similar opportunity for conscienceless exploitation, the more ruinous in that to a combination of the other forces it has added a superstitious overpowering of men's minds. Here then is the historic significance of the Reformation. It is the latest and greatest affirmation that man as man has the right to a freedom where, subject to

God alone, he may work out his own destiny unhampered by prince, priest, or tyrant. Protestantism and the democratic ideal are but different aspects of the same aspiration Its greatness is that it but reaffirms "for freedom did Christ set us free."

Such was the vibrant atmosphere of a new age and a new world in which the modern English Bible had its beginnings, itself in turn to become one of the potent forces in the making of the succeeding centuries. Just about one hundred years after Wycliffe's death William Tyndale [illegible] "about the borders of Wales," Foxe says he was "brought up from a child" in the University of Oxford, and was "singularly addicted to the study of the Scriptures" He studied in Magdalen Hall under the famous classical teachers, Grocyn, Latimer, and Linacre. Somewhere about 1510 he left Oxford and went to Cambridge, probably to study under Erasmus, the renowned Greek New Testament scholar. His university career seems to have covered some ten years, for about 1520 he returned to his native countryside and for two years was a tutor in the family of Sir John Walsh. The inspiration that he had received at Oxford and Cambridge fired his soul to action, for during these years he carried on vigorous thinking and discussion with the conservative and unthinking clergy regarding the work of the church. In one of these controversies with a churchman, according to Foxe, Tyndale said, "if God spare my life, ere many years I will cause a boy that driveth a plough shall know more of the Scriptures than thou doest." Tyndale's thorough preparation for handling the Greek of the New Testament—for Erasmus' Greek New Testament appeared in 1516, while he was still studying at Cambridge—and his familiarity with the needs and requirements of the times furnished him the stimulus and inspiration to produce an English Bible translated directly out of its original languages

When his opponents became too numerous, and even began to endanger his life, Tyndale went to London. Here he sought out Tunstall, Bishop of London, of whose love of learned pursuits he had heard through Erasmus, he hoped to secure his approval, and also to win his support for the plan he had conceived of translating the Bible into English But the Bishop made excuses and did not receive him Tyndale, however, soon found a friend and helper in Humphrey Mon-

mouth, an alderman of London, who for his favor to Tyndale was afterward incarcerated in the Tower of London. This Monmouth gives a description of Tyndale in which he says. "I took him into my house half a year; and there he lived like a good priest as methought. He studied most part of the day and of the night at his book; and he would eat but sodden meat by his good will, nor drink but small single beer. I never saw him wear linen about him in the space he was with me I did promise him ten pounds sterling, to pray for my father and mother, their souls and all Christian souls I did pay it him when he made his exchange to Hamburg" His life of almost a year in London was an eye opener to Tyndale. Brought up in the country, he soon was impressed by the cosmopolitan character of the city. Here he met tradesmen and merchants from many countries, and through them secured much valuable information regarding the progress of religious and political thought. Doubtless he learned the possibilities, too, of finding a place where he could put into print the translation that he was making. His experiences with churchmen and politicians in London for almost a year seem to have driven him to the following conclusion· "I . . . vnderstode at the laste not only that there was no rowme in my lorde of londons palace to translate the new testament, but also that there was no place to do it in all englonde."

Though he left London practically as an exile, he was given assurance that means would be provided to print his translation, and that it would be secretly imported into England and distributed where it would serve its high and noble purpose. In the springtime of 1524 he went to the free city of Hamburg Evidence goes to show that most of the following year was spent in Wittenberg, in close relations with Luther, the giant reformer of Germany Early in the spring of 1525 he returned to Hamburg to receive a remittance of funds from his London friend, Monmouth.

In April, 1525, he went to Cologne to put into print his completed translation of the New Testament. Here he found Quentel, an expert printer, who undertook the work. But the enemies and spies of the anti-reformation party were busy, especially in Germany Cochlaeus, a vigorous enemy of Luther and the reform movement, was now in Cologne, carrying a book through the press where Tyndale's translation was being printed. By some accident he heard the printers boast-

ing of the new successes about to be won for Lutheranism in England. To be certain of his ground, he invited to his home and dined and wined these same printers until they talked freely, and gave away the secret that they were printing three thousand copies of the New Testament in English for Tyndale, to be secretly distributed throughout England. Cochlaeus immediately informed the authorities at Cologne, who put a stop to the work. Tyndale, however, with Roye, his amanuensis, took their printed sheets and escaped by boat on the Rhine up to the city of Worms, already famed for its Lutheran strength.

Tyndale found a welcome refuge in this hospitable city, and put his work into the hands of the printer Schoeffer Cochlaeus had already sent to England a description of the work done in Cologne, so Tyndale laid it aside temporarily and first issued an octavo edition of three thousand copies, without either introduction or notes But this was soon followed by the edition begun in Cologne, which was in quarto, with marginal notes Both editions were shipped into England hidden away in cases of merchandise. Being completed late in 1525, it is probable that they were in England early in 1526; for Edward Lee, later (1531) Archbishop of York, who was then on the continent, wrote Henry VIII, under date of December 2, 1525, "that an Englishman, at the solicitation and instance of Luther, with whom he is, hath translated the New Testament into English, and within four days intendeth to return with the same imprinted into England" It is of interest here to note an entry in the diary of a German scholar by the name of Spalatinus, in August, 1526 Among other things he says that Tyndale "was so skilled in seven languages, Hebrew, Greek, Latin, Italian, Spanish, English, French, that whichever he spoke you would suppose it his native tongue." He further adds "that the English, in spite of the active opposition of the king, were so eager for the Gospel as to affirm that they would buy a New Testament even if they had to give a hundred thousand pieces of money for it"

As soon as Tyndale's English New Testament reached England there was a great demand for it. by the common people, that they might read it, and by the ecclesiastical authorities, that they might burn it! Archbishop Warham issued a decree for its destruction. Bishop Tunstall added fuel to the fire by saying that he could find two thousand errors in it. Decrees and denunciations, however, were of little

avail to stay its popularity. By order of the ecclesiastical authorities the books were bought up and burned in London, Oxford, and Antwerp, but without avail An effective organization of distributers in England was supplied by numerous clandestine shippers from the Continent. The fight was desperate, on one side to disseminate Tyndale's New Testament as widely as possible, on the other to annihilate it. The bishops liberally contributed to buy up whole editions to consign to the flames An English merchant at Antwerp by the name of Packington was a friend both of Bishop Tunstall and of Tyndale The Bishop made a contract with Packington to buy all the books he could, at any cost, and send them to him so that he might burn them at St. Paul's Cross. Hall, the chronicler, describes the case as follows, "So Packington came to William Tyndale, and said, 'William, I know thou art a poor man, and I have gotten thee a merchant.' 'Who?' said Tyndale. 'The Bishop of London.' 'He will burn them,' said Tyndale. 'Yea, marry,' quoth Packington. And so forward went the bargain The Bishop had the books, Packington the thanks, and Tyndale the money."

Thus the enemies of Tyndale's translation tried with persistent energy to obliterate it. All the machinations of the court seem to have been employed to stamp out so dangerous a heresy. Even King Henry, who had paid no heed to Tyndale's appeals, described the works as "imagened and onely fayned to enfecte the peopull" The success of their campaign of destruction may be partially inferred from the scant remnants now extant of Tyndale's translation Of the quarto edition begun at Cologne and completed at Worms, there is known to be in existence just one fragment, now in the Grenville Library in the British Museum. It consists of thirty-one leaves and contains a prologue, a list of New Testament books, a woodcut of an angel holding up an inkstand into which Matthew is dipping his pen, and Matthew 1.1 to 22 12. Eight of these sheets were printed by Quentel in Cologne in 1525 and carried by Tyndale to Worms. Of the octavo edition one copy, perfect except for missing the title page, is now preserved in the Baptist College, Bristol, England; another copy very imperfect is in the library of St. Paul's, London. The fierceness and destructiveness of the opponents of Tyndale's translation systematically followed up and destroyed the thousands of copies that had been widely sold

through England and Scotland Of the estimated eighteen thousand copies printed between 1525 and 1528 the two just mentioned are the only known fragments.

Tyndale's English New Testament began a new epoch in the history of the English Bible. It was not a translation of a translation, as was Wycliffe's, but was rendered out of the original Greek text of the New Testament, probably as published by Erasmus in 1516 and revised in 1522. Tyndale made use of such helps as the Vulgate, Erasmus' Latin translation of his own Greek text, and Luther's German translation. Many of the errors charged against his English New Testament are due to the differences between Erasmus' Greek text and the Latin Vulgate. The violent opposition of the church authorities was due to causes other than the mere putting of the Bible into the hands of the common people Tyndale had followed the custom common in the issuance of the Vulgate, and had incorporated marginal notes in his earlier editions These were sometimes controversial, and so fired the wrath of his adversaries In later editions, however, they were modified or omitted Also, Tyndale was not careful to retain in his translation the long-cherished words of the Vulgate and of the church, but freely translated the Greek into words that seemed to him best to convey the thought of the original. Such freedom meant the abandonment of many long-cherished phrases, for which there were substituted words that seemed strange in a book so beloved as the Bible. Then, too, the determination and persistence of Tyndale's friends in their clandestine importing of his New Testaments into England, and their success in giving it wide distribution, only inflamed the church authorities to more desperate methods of suppression. But its real value, despite all opposition, was so great as to make it a really dangerous weapon against many of the hollow claims of the church Its faithfulness to the Greek established its importance as the best translation of the New Testament for all classes

As soon as Tyndale's New Testament had been well launched upon the English reading public, he took up the work of translating the Old Testament out of the Hebrew text In 1530 he published a translation of the Pentateuch, accompanied by marginal notes that were severely controversial. Their form would indicate that they were printed separately, for Genesis and Numbers appear in blackface type, as over

against the other three, which are plain roman. In 1531 the book of Jonah appeared in translation—the Pentateuch and Jonah being the only portions of the Old Testament published during Tyndale's lifetime. He spent the next three years busily engaged in a revision of his earlier work. In 1534 he published a revision of his Pentateuch, 1530 edition, and of the New Testament of the 1525 edition The motives that led him to revise his translation of the New Testament rather than to complete that of the Old Testament were (1) to meet the sharp criticism that had been hurled at his first edition, and (2) to checkmate a revision, wholly unauthorized, by his old amanuensis, George Joye, which appeared the same year. Joye had corrected some of the earlier printers' errors and made changes that more closely harmonized with the Vulgate and his own theological opinions. Tyndale made several important improvements upon his earlier editions He supplied brief introductions to each of the New Testament books, except Acts and Revelation, took the sting out of many of his marginal notes, and at the end of the volume added the "Sarum" epistles, extracts from the Old Testament to be used in the church services "upon certain days of the year" He also included several passages from the Apocrypha.

The persistent and continued efforts of Tyndale and his friends had made a distinct gain in the distribution of the New Testament. Though the opposition to his work had somewhat abated he dared not return to England. In fact, his work had already so impressed Cromwell and Cranmer that they began to agitate for a translation of the Bible into English under royal patronage Tyndale, however, took up his residence at the "English House," an English merchants' club, in Antwerp. Here he worked, apparently safe, amid a number of his merchant friends. But the bitterness of the opposition now showed itself by its sending or employing of an Englishman, Henry Philips, a Romanist, to do a treacherous deed. After pretending to great friendship for Tyndale, he stealthily and murderously betrayed him, in May, 1535, into the hands of officers of Emperor Charles V, who seized him, carried him off, and thrust him into a dungeon in Vilvorde Castle, near Brussels. While confined in this place he was permitted, it is thought, in response to an appeal to the governor of the castle, to use his Hebrew Bible, grammar, and dictionary, and possibly his Greek New Testament. For during his imprisonment he is credited with

having once more revised his New Testament, adding headings to the chapters of the Gospels and the Acts While here he is also thought to have translated Joshua to II Chronicles, though its publication was left in the hands of his friend, John Rogers There is no evidence that Henry VIII or Cromwell had anything to do with his arrest or imprisonment, but on the other hand, their efforts, if any, for his release were halfhearted. On October 6, 1536, Tyndale was brought to trial

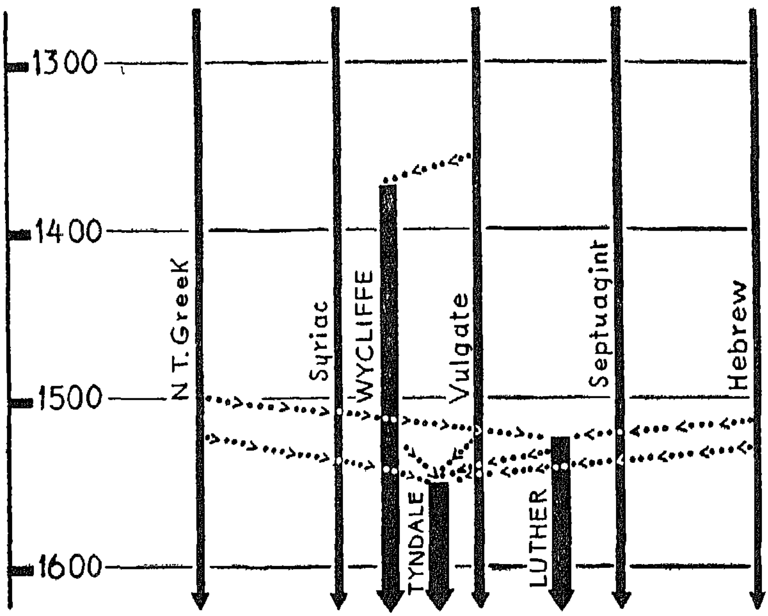


DIAGRAM SHOWING THE BEGINNINGS OF ENGLISH VERSIONS, EARLY IN THE SIXTEENTH CENTURY

and, being proved a heretic, was condemned to death He was tied to a stake, praying, according to Foxe, in these, his last words· "Lord, open the King of England's eyes," and then was strangled and burned

But Tyndale won his battle In the face of fierce opposition from the church authorities, he had determined to give the Bible to the common people in their native tongue Though the books were bought up and burned in quantities, they contributed greatly to the creation of an appetite for the Bible in English that could not be extinguished Popular demands soon reached the throne and, in spite of earlier adverse action

toward Tyndale's work, made an impression. The court and the government wisely recognized the necessity of providing an edition of the English Bible for popular use. Even in 1534, before Tyndale's death, a convocation under the presidency of Cranmer petitioned the King that he would "think fit to decree that the holy scriptures shall be translated into the vulgar tongue by certain upright and learned men to be named by the said most illustrious King and to be meted out and delivered to the people for their instruction."

Tyndale's victory had far-reaching results He was a master of a simple and forceful literary style This, combined with exactness and breadth of scholarship, led him so to translate the Greek New Testament into English as largely to determine the character, form, and style of the Authorized Version There have been some painstaking calculations to determine just how large a part Tyndale may have had in the production of the version of 1611 A comparison of Tyndale's version of I John and that of the Authorized Version shows that nine-tenths of the latter is retained from the martyred translator's work Paul's Epistle to the Ephesians retains five-sixths of Tyndale's translation. These proportions are maintained throughout the entire New Testament. Such an influence as that upon the English Bible cannot be attributed to any other man in all the past.

More than that, Tyndale set a standard for the English language that molded in part the character and style of that tongue during the great Elizabethan era and all subsequent time. He gave the language fixity, volubleness, grace, beauty, simplicity, and directness. His influence as a man of letters was permanent on the style and literary taste of the English people, and of all who admire the superiority and epochal character of the literature of the sixteenth century.

CHAPTER XX

Versions Close to Tyndale's

TYNDALE'S last words and prayer, "Lord, open the King of England's eyes," were even at that moment being fulfilled. The one upon whom was laid the burden of carrying out the spirit of the petition of the convocation of 1534 was Myles Coverdale. As early as 1527 he was an intimate friend of Cromwell and More, and it may be that under their encouragement he began to prepare for his translation of the Bible. If Foxe is to be believed, Coverdale met Tyndale in Hamburg and helped him on his translation of the Pentateuch. However this may be, one thing seems certain, viz., that he was busily engaged in preparing a translation of the Bible into English, though it is positively asserted that he was neither a Hebrew nor a Greek scholar King Henry's antipathy to Tyndale and his work, on the one hand, and the growing popular demand for the Bible in English, on the other, may have led the monarch to approve of the plan of his friend Coverdale, thus encouraging him to complete his translation. Besides, Cromwell, Secretary of State, gave him his active support in getting his work before the public.

The moral and financial support of high officials immediately brought Coverdale's work into the public eye While Tyndale was incarcerated in Vilvorde Castle, in Belgium (1535) an English Bible suddenly appeared in England It had evidently crept in from the Continent. It was printed in black letter, small folio size, and dated, "fynished the fourth daye of October." Either Coverdale's relation to the authorities or his desire to court their approval is seen in an effusive dedication to Henry VIII, signed if we may judge from the edition of 1537, by his "humble subjecte and dayle oratour, Myles Coverdale." It gave neither printer's name nor place of printing The title page of the original edition stated that this Bible had been "translated out of Douche [German] and Latyn in to Englishe." The first

imprint of this edition left out "Douche and Latyn." It has been ascertained that the printed sheets reached London in the winter of 1535-36, and that they were bound and supplied with a new title page by Nycolson, which carried on it "faythfully translated in Englysh and newly oversene and corrected." The cutting out of "Douche and Latyn" from the title page, as in the second issue mentioned above, probably avoided the current antagonism in the church to Lutheranism, and also may have led the reader to suppose that the book was translated out of the original Greek and Hebrew. At any rate, it seems not to have been arrested in its circulation, though there does not appear to have been either any royal prohibition or sanction for the earlier editions.

Myles Coverdale must be credited with having published the first complete Bible in the English language. In contrast with the work of Tyndale, it was not translated from the original Hebrew and Greek texts but was based on (1) the Zurich Bible of Zwingli and Leo Juda, completed in 1529; (2) Luther's German; (3) the Vulgate, (4) the Latin text of Pagninus (1528); and (5) probably Tyndale's work in the Pentateuch In the New Testament Coverdale's main sources of help were Tyndale's latest (1534-35) revision and Luther's German (1522) In that part of the Old Testament of which Tyndale had published no translation, viz, the historical books, Joshua to II Chronicles, the poetical and prophetical books, Coverdale made the most familiar use of Zwingli's Zurich Bible It is apparent then that Coverdale was essentially an editor, who gathered together the best materials within reach, and so selected and so modified them as to construct a Bible that would meet both the demands of the public and those of the ecclesiastical authorities. His great good sense, as shown in the use of language to secure beauty, harmony, and melody, made him a wise editor His essentially peaceful nature led him to restore many beloved ecclesiastical terms that Tyndale had thrown out for new and more exact translations of the original Greek and Hebrew texts. Indeed, so happy are some of the translations of Coverdale that they were perpetuated in the King James Version.

Coverdale's Bible so met the requirements of all parties that it immediately achieved popularity In 1537—one year after the martyrdom of Tyndale—two revised editions appeared, carrying this statement,

"set forth with the king's most gracious license." In 1538, Coverdale published a revised New Testament with the Latin in parallel columns Thus within twelve years from the issuance of Tyndale's New Testament, which had to be printed abroad and clandestinely carried into England, and less than one year after Tyndale's death, we find the entire Bible translated, printed, and distributed apparently with royal approval.

The character and position of the men who fostered the enterprise doubtless aided in the reception accorded Coverdale's work. Tyndale was a genius, self-poised, original and creative. He was every whit a scholar and stood absolutely on his convictions, regardless of consequences. Coverdale was an imitator, a follower in the tracks of others, harmonistic, sympathetic, and gentle. He was modest, dependent, and regarded, always and everywhere, the interests of others in his decisions Tyndale was convinced that he had a great mission in this world and he bent everything to accomplish that end Coverdale worked quietly, with no apparent expression of a burning zeal. Tyndale's tremendous energy and love of the right led him to translate into English the best Biblical texts that he could find Coverdale's marvelous capacity for harmony, in spite of his lack of scholarship, led him to compile and to publish the first complete Bible in the English language. Each man was a kind of complement to the other, and together they were able to set forth the English Bible in such form and character as to command the English Bible-reading public

Bible translation and revision were now in the air. Popular demands and royal favor joined hands to aid such work. John Rogers, an Oxford graduate of 1525, went to Antwerp some years afterwards as chaplain to the "English House," in which Tyndale was making his home Here he soon became a close friend of the translator and, as some think, of Coverdale When Tyndale was spending his last days in Vilvorde Castle, he turned over to John Rogers his unpublished work, his translation of Joshua to II Chronicles inclusive. Rogers doubtless was acquainted with the version that Coverdale published in 1535 But now, being in possession of all that Tyndale had translated, both published and unpublished, he seems to have desired to give it to the public in a complete edition Accordingly he prepared a Bible with Tyndale's work from Genesis to II Chronicles inclusive,

Coverdale's version for the rest of the Old Testament and the Apocrypha, and Tyndale's New Testament of his last revision in 1535. This mass of material was revised with few changes, furnished with introductions, summaries of chapters, illustrations, and some controversial marginal notes.

That the name "William Tyndale" should not appear on the title page seemed essential to the public sale of the work, therefore it bears the name "Thomas Matthew," supposed to be either a pseudonym for John Rogers or the name of some merchant who backed up the enterprise in a financial way. At any rate, the book began to be printed, it seems, in Antwerp, where Rogers had for several years held the somewhat leisurely office of chaplain When the printing reached Isaiah there was a stoppage for lack of funds. Two London merchants came to the rescue and carried the work through to completion in 1537.

This Matthew Bible was 12 by 8 inches in size and printed in black letter. Its boldest stroke is its dedication to "The moost noble and gracyous Prynce Kyng Henry the Eyght and Queen Jane," and signed "Thomas Matthew." The "Prayer of Manasses," omitted from Coverdale, was taken from the French Bible of Olivetan. The dedication may have been advised by such men as Cranmer and Cromwell, who seem to have welcomed its appearance Cranmer in a letter to Cromwell says, "You shall receive by the bringer hereof a Bible in English, both of a new translation and of a new print So far as I have read thereof, I like it better than any other translation heretofore made . . I pray you, my Lord, that you will exhibit the book unto the king's highness, and to obtain of his Grace, if you can, a license that the same may be sold and read of every person, without danger of any act, proclamation, or ordinance, heretofore granted to the contrary, until such time that we the Bishops shall set forth a better translation, which I think will not be till a day after doomsday." Within a week Cromwell replies that he had "obtained of his grace that the same shall be allowed by his authority to be bought and read within this realm."

Thus Henry VIII, who had proscribed Tyndale's New Testament in 1525, who apparently made no effort to save the life of its translator in 1536, within one year after his martyrdom authorized the sale and use of Tyndale's work, though under another name. Hence, by the

influence of Cranmer, the co-operation of Cromwell, and the authorization of Henry VIII the Matthew Bible was given free course on English soil. Being a compilation, as it were, of Tyndale and Coverdale, it was the best English Bible in print.

There were now two English Bibles, Coverdale's and Matthew's, which were sold on authorization of the King. But the decree had gone no further. Cromwell was a shrewd politician and a farsighted churchman He doubtless saw the deficiencies of the two English revisions that were so freely circulated by royal decree Coverdale's Bible had been compiled from various sources, and not translated from the original Hebrew and Greek. Matthew's Bible was a compilation of translations of varying values, whose marginal notes carried here and there a sting of controversial character. Besides, royal discovery of the Tyndale translations under the mask of "Matthew" might precipitate a storm in the court. Consequently Cromwell secured the services of Coverdale to prepare a revised Bible that should be free from the objections to the two already authorized. Coverdale was to make the translation, as far as possible, more faithfully to represent the Hebrew and Latin texts of the Complutensian Polyglot. His deficiency in Hebrew and Greek learning seems to have been supplemented by his employment of scholars efficient in these languages. His editorial sagacity, his popular grasp of the needs of the times, his power to use others, and his favor at court seem to have combined in him just those elements of character that could produce a Bible that would be acceptable to all parties

The editorial work having been done, Coverdale could find no facilities in London for executing the work on the scale that he had marked out for it. With Richard Grafton, the London publisher, he went to Paris in the spring of 1538 With Regnault, the French printer, and under royal license, the printing began. But the Inquisition uttered its voice, and ordered the work to be confiscated By shrewd management and trickery equal to that of the inquisitors, Coverdale safely transferred printed sheets, printers, presses, type and other outfit to London. In April, 1539, the new revision was completed Because of its splendid proportions and magnificent form it was called "The Great Bible." It was in large folio, black letter, and carried neither notes nor dedication. Its unique title page reads: "The Byble in

Englyshe, that is to saye the content of all the holy scrypture bothe of ye old and new testament, truly translated after the veryte of the Hebrue and Greke textes, by ye dylygent studye of dyverse excellent learned men, expert in the forsayde tonges. Prynted by Rychard Grafton and Edward Whitchurch. Cum privilegio ad imprimendum solum, 1539 . . Fynisshed in Apryll, Anno MCCCCCXXXIX. A Dño factū est istud."

One of the remarkable features of this book is its artistic frontispiece. It consists of a design often erroneously attributed to Hans Holbein, 9 by 14 inches, in which the King's authority is strikingly set forth, apparently as a method for securing royal patronage and favor in the distribution and use of this new work. For Henry VIII is depicted handing down the Bible to Cranmer and Cromwell, who in turn distribute it to the people amid their shouts of "*Vivat Rex!*" and "God save the King!"

What now were the Biblical contents of this Great Bible? The title page specifies that Coverdale had made use of Hebrew and Greek experts in its preparation. But the short space of time between the appearance of his own revision and that of the Great Bible would scarcely permit much expert work to be done. The Old Testament is Matthew's (Rogers-Tyndale-Coverdale) edition, revised on the basis of Sebastian Munster's Latin translation of 1535. In the New Testament, Tyndale's translation was the basis, revised by making comparison with the Latin translation of Erasmus, and also of the Vulgate. So the result of Coverdale's careful editorial supervision, "The Great Bible," was only a revised edition of John Rogers' "Matthew" Bible, which was the most complete presentation of the translation work of William Tyndale, whose martyrdom had occurred only three years earlier (in October, 1536).

The hand of Cromwell had been supporting Coverdale in his great work, so that without fear of interference he could prosecute his plans on a large scale. In fact, "the King's most honourable Council" had taken enough active interest in the enterprise to cut out all marginal notes The publication of the so-called extra volume of annotations was postponed indefinitely Furthermore Cromwell, as the King's right-hand officer, showed his interest in the work by promulgating in 1536, but not issuing until September, 1538, an order to the clergy

throughout the kingdom to provide before a specified day "one boke of the whole Bible, of the largest volume, in Englyshe, and the same sett up in summe convenyent place within the said churche that ye have cure of, whereat your parishners may most commodiouslye resort to the same and rede yt" What a revolution! In 1525-26, Tyndale's New Testament was publicly burned at St. Paul's In 1538 the same book, under another cover and name, was ordered by sanction of royal authority, if not decree, to be placed in public places, where all could read it Tyndale had been martyred, but his battle had been won The Bible in English was commanded to be put in every parish church in the land The church historian Collier says that a paper dating from 1539 declares "Englishmen have now in hand, in every church and place, the Holy Bible in their mother tongue, instead of the old fabulous and fantastical books of the 'Table Round,' 'Lancelot du Lake,' 'Bevis of Hampton,' 'Guy of Warwick,' etc, and such other, whose impure filth and vain fabulosity the light of God has abolished utterly" (Hoare, p. 194)

Although Archbishop Cranmer was not actively engaged in the production of the Great Bible, he soon championed its cause. King Henry VIII gave to Cromwell the absolute right of licensing the publication of the Bible for five years. Archbishop Cranmer prepared a Preface for the second edition, which appeared in April, 1540. From the Preface the version was often called "Cranmer's Bible." In July and November two other editions (third and fourth) followed In 1541 three editions (May, November, and December) were issued from the London presses Six of them carry Cranmer's Preface; and the third and fifth have on their title pages the names of Tunstall and Heath, who had "overseen and perused" the book "at the commandment of the King's Highness." So Bishop Tunstall, who had so vigorously condemned, bought up, and burned Tyndale's New Testament, now formally on the title pages indorses its publication and use. Suspicion had been attached to Cromwell's acts and name, for he was sent to the executioner's block in July, 1540 But the Bible had free course for a time The seven editions of the Great Bible within two years testified to its immense popularity and the public demand for it Indeed, so firm a hold did it take upon the church authorities

that it formed the basis of the English Prayer Book, and was secure in its authority as the Bible of the English people for thirty years.

Its presence in the churches where everyone could approach and read it became an actual menace to the preacher and the public services For readers would crowd about it, read and discuss it, while the preacher was trying to deliver his sermon These events became so irritating to the clergy that Henry VIII issued a warning or injunction that every preacher charge his congregation to use this Bible "most humbly and reverently," not "having thereof any open reasoning in your open taverns or alehouses," using it "quietly and charitably every [one] of you to the edifying of himself, his wife and family"

Whatever else may be said of the open Bible, it is perfectly plain that the authorization of Cromwell, in putting it within the reach of everyone, aroused the English nation to a new conception of the meaning of Biblical teachings and furnished new incentive to a more liberal, personal type of religion than was generally represented by the ecclesiastical establishment.

During the same year that Coverdale was completing the printing of his Great Bible, an Oxford scholar, a layman and lawyer, Richard Taverner, was printing another revision, apparently at the instigation of the King's printer, Thomas Barthlet, or perhaps even of Cromwell Taverner was a good Greek scholar, but apparently was unacquainted with Hebrew He dedicated the revision to King Henry in dignified, courteous, and straightforward language. The Old Testament followed the Matthew revision with only slight changes, occasioned by comparison with the Vulgate The New Testament revision bears some marks of Taverner's Greek scholarship and contributes several readings to the later King James text

Taverner's Bible appeared in 1539, in two editions, a folio and a quarto; his New Testament appeared the same year, separately in two editions, a quarto and an octavo. It was the first English Bible to be completely printed in England. The whole Bible was but once reprinted; the Old Testament was adopted in a Bible of 1551. Otherwise the revision was entirely superseded by the Great Bible, now circulated and used by royal authority.

CHAPTER XXI

The Genevan, Bishops', and Douai Versions

CROMWELL'S political and religious policy had caused his downfall and execution. His wholesale confiscation and destruction of shrines, images, and other religious symbols; his forcible plundering of abbots, monks, and monasteries; his wrecking of even the buildings connected with worship stirred up a revolution among the Roman Catholic subjects throughout the kingdom Cromwell's head was only one of their demands The exalted place that he had given the English Bible and the Reformation movement could not long be maintained. A most determined reaction set in against everything that looked like Lutheranism or the Reformation that had made such astounding progress on the Continent, particularly in Germany. King Henry VIII was in danger. He was forced not simply to modify but almost to reverse the policy inaugurated by Cromwell In 1543 Parliament proscribed all translations bearing the name of Tyndale. It also "required that the notes in all other" versions should be expunged. Furthermore, it was enacted that no "laboring men or women should read to themselves or to others, publicly or privately, any part of the Bible, under pain of imprisonment" In 1546 King Henry proscribed every Bible and every separate New Testament, except the Great Bible. The reading and use of this was restricted to the upper classes—to the people of leisure, as it were. At this time Bibles and Testaments were burned by the hundreds to satisfy the anti-reform movement, which had taken off the head of Cromwell. Tunstall and Heath, who had caused their names to be printed on the title pages of the Great Bible in approval thereof, now said "they never meddled therewith" At the climax of this reaction against the Reformation King Henry died (January 28,

1547). It looked as if Bible translation work had received its death blow.

With the accession of Edward VI, the sun temporarily rose on the Reformation. This young king, even at his coronation, affirmed his devotion to the Bible, commanding that it be carried before him. His religious and political policy was that of the reform party. During his reign of six and one-half years (1547-53) the English Bible was reprinted many times and in many editions. Thirty-five editions of the New Testament and thirteen of the Old were issued from the press. The king's attitude and policy were set forth in certain injunctions issued at his coronation Among these we find that every beneficed person shall provide "one book of the whole Bible of the largest volume in English, . . . the Paraphrasis of Erasmus also in English upon the Gospels," and shall set up the same "in some convenient place within the . . . Church, . . ." where "their parishioners may most commodiously resort unto the same and read the same." What a reversal of the last policy of King Henry! Reformers, too, who had fled to the Continent to escape the wrath of King Henry, now came back to meet the welcome of the new ruler, and of Archbishop Cranmer. These warm friends of the new king formed a choice group for promoting the reform Calvinism and Lutheranism were flourishing, although the extreme measures of the protectorate which was the real power behind the throne helped make possible a new period of Catholic ascendancy.

At the close of Edward's all too short reign, Mary Tudor came to the throne (1553). England again fell back into the hands and power of Roman Catholicism Mary quickly turned the tables upon Protestantism, and inaugurated a reign of terror by lighting the fires of Smithfield. Archbishop Cranmer and John Rogers, with hundreds of others, were burned at the stake. Myles Coverdale, now Bishop of Exeter, escaped with difficulty to the Continent. Scores of reformers took the same road to safety. But the fierceness of Mary's persecution defeated its own purpose The burning of such men as Archbishop Cranmer caused a revolt in the hearts even of his opponents The use of the English Bible in public was prohibited, and the copies placed in churches by the order of Edward VI were removed and burned. But there was no searching or spying out hidden copies in order to

destroy them. The horrors of Smithfield and the suppression of the English Bible had driven into voluntary exile some of the best Biblical scholars of England These men drifted to Germany and Switzerland, and naturally took up the cause they loved so dearly. After five years (1553-58) of bloody persecution and terror, in which some of the best men of England had suffered martyrdom, Mary went to her place.

One of the direct results of the persecution of Mary was the flight of some of the reformers to Geneva, Switzerland, the home of Beza, the most noted Biblical scholar of the time, and of Calvin, the theologian. The city of Geneva was the home of free thought, hampered by no political or religious restrictions It was a home of Biblical scholars of more than one nationality. Beza's critical and exegetical work had done much to clear up some of the difficulties of translation and interpretation. The company of English scholars now improved their long-desired opportunity to revise the Great Bible and bring it up to the new standards of scholarship. William Whittingham, a brother-in-law of Calvin and [illegible]e preparation and printing of [illegible] 7, with an introduction by Calvin The reviser's Preface contains some instructive information He says, "I have divided the text into verses [first marked on the margins of Stephanus' Greek Testament of 1551] and sections, according to the best editions in other languages." He provided marginal notes wherever he could thereby explain obscure Hebrew or Greek phrases. This often amounted virtually to a running commentary, and was strongly Protestant in nature He also introduced in italics words required to complete the sense but lacking in the original tongues, a practice continued down through the Revised Version.

This was the most completely annotated, and also the most accurate English New Testament that had yet appeared. Its merits soon won for it a hearty welcome, even in England Its notable reception led its promoter to engage in a larger work for the cause of the Reformation and of Biblical learning

Whittingham, with the aid of a group of scholars, whose names we know only in part, although Coverdale was probably one of them, assiduously worked on a revision of the Great Bible. This work continued "for the space of two years and more day and night." It is re-

ported that "Whittingham, with one or two more, being resolved to go through with the work, did tarry at Geneva an year and an half after Q. Elizabeth came to the Crown" (November, 1558). Thus it is evident that not all the group of scholars worked during the entire time of revision. The work was completed and the new Bible published in 1560, dedicated to Queen Elizabeth in simple, dignified language. The cost of the printing was defrayed by the congregation at Geneva, among whose members we find John Bodley, the father of the founder of the Bodleian Library, at Oxford He secured from Queen Elizabeth the exclusive right to print the Bible in England for seven years. In 1561 he printed a folio edition in Geneva

The size of the Genevan version was a quarto—small in comparison with the folios of Coverdale, Matthew, and the Great Bible Another innovation, both in the edition of the New Testament and in that of the complete Bible, was the abandonment of black letter for the plain, simple roman type As in the New Testament of 1557, the chapters were divided into verses, and the margins carried explanatory notes that smacked somewhat of Calvinism and were in places, e g., the Revelation of John, polemically anti-Catholic.

The Geneva Bible immediately sprang into popularity. Its superiority to every other preceding version, and the silent assent of Queen Elizabeth to its distribution and use, gave it a tremendous impetus as an instrument of popular religious reform. In the Old Testament the learned revisers took as their basis the Great Bible, and thoroughly revised the translation on the evidence of the best texts. The most sweeping changes were made in the prophetical and hagiographical books—books unrevised by Tyndale. The New Testament work, based on Tyndale's last revision, was largely affected by Beza's Latin translation and commentary

The Geneva Bible, however, did not displace the Great Bible for [illegible] h- [illegible] n-
parisons that were detrimental to this long-established Bible of the parish church. Thus the two books were used side by side from the beginning of Queen Elizabeth's reign, until the appearance of the Bishops' Bible in 1568. Thenceforth the Geneva Bible was nevertheless demanded in increasing ratio, so that by 1644 not less than one hun-

dred and forty editions had appeared. The most important revision to appear was a New Testament of Lawrence Tomson, in 1576, which was strangely influenced by Beza, whose Greek, in fact, he claimed to be translating This New Testament was substituted in many later editions of the Geneva Bible.

The popularity and patent superiority of the Geneva Bible was not pleasing to the authorities, and a movement was begun to produce an officially acceptable version which could compete with it. Archbishop Parker, therefore, who was a devoted and learned Biblical scholar, took steps in 1563-64 for a revision of the Great Bible. His plan involved the dividing of the whole Bible into parts, and the assigning of one part to each of a large number of scholars. He assigned to himself the offices of general editor and overseer of the printing of the text. At least nine of the revisers were bishops, hence the resultant Bible came to be called "The Bishops' Bible." The directions given the revisers included specifications that they were to follow the Great Bible, except where "it varieth manifestly" from the Hebrew and Greek. They were to regard especially the Latin versions of Munster and Pagninus. "Bitter notes" and controversial matter were to be omitted. "Genealogies" and other non-edifying passages were to be so indicated as to be passed over by the reader. Language that gave offense to good taste was to be "expressed with more convenient terms and phrases" Several of the bishops engaged on the work carried on a frank correspondence with Archbishop Parker. The work was evidently done without conference or consultation among the revisers, so that the result was a considerable degree of unevenness. On the completion of the revision, the editorial work, and the printing (in 1568), Parker made an effort to secure for the new Bible the recognition of the Queen But so far as evidence goes, it was not granted. Convocation, however, decided (1571) that "every archbishop and bishop should have at his house a copy of the Holy Bible of the largest volume as lately printed at London . . . and that it should be placed in the hall or the large dining room, that it might be useful to their servants or to strangers." Every cathedral was to have a copy, and so were all other churches, "as far as it could be conveniently done"

The Bishops' Bible was a large folio, in type and format similar to the Great Bible except for the introduction of verse division The title

page bore the words, "The holie Bible conteyning the olde Testament and the newe," and a portrait of Queen Elizabeth. As a frontispiece of the book of Joshua there was a portrait of Lord Leicester, and of the Psalms, one of Cecil, Lord Burleigh. The division into verses followed that of the Geneva Bible, although the Preface ascribes it to the Pagninus Bible. Then the book was provided with marginal notes, almanacs, calendars, tables, pictures, and maps. Besides the Preface of Archbishop Parker, the Bible contained that of the martyr Cranmer, which was found in the Great Bible.

The internal character of the work is about what would be expected The contents were of unequal merit In the Old Testament the readings of the Great Bible are quite faithfully followed, while the Apocrypha is almost identical with it, though the Great Bible was based largely on a Latin text. The New Testament, on the other hand, exhibited marks of real scholarship in its revision. Even the Geneva version exerted a considerable influence, and many of its marginal notes were actually adopted In the second edition in 1572, the New Testament was notably revised and improved, while the Old remained as it had been.

But the authorization of the bishops was enough to displace the Great Bible at once from public use. For its last edition appears to have been printed in 1569, only one year after the publication of the Bishops' Bible. The Psalter of the Great Bible was retained, however, as we have indicated. The second edition printed both in parallel columns but all later editions except one contained the earlier form. This new Bible was far from satisfactory to the increasingly large number of able scholars Its ponderousness and its ecclesiastical sanction were not enough to popularize it Its illustrations were such as to make it an object of reproach—the second edition being called the "Leda" Bible, from its objectionable picture of "Leda and the Swan" in the initial letter of the Epistle to the Hebrews. It was held in high ecclesiastical regard for about forty years, and passed through twenty editions, six in quarto, one in octavo, and thirteen in folio—the last bearing the date of 1606

Protestant refugees from the persecutions of Queen Mary produced the Geneva Bible. On the other hand, upon the accession of Queen Elizabeth some of the Romanist party, now forced to the background,

migrated to the Continent. The popular demand for the English Bible, and the answer to this demand by the Protestant revisions now freely circulated, led the Romanists to see the necessity of providing a version for their own adherents. In 1568, the year of the issuance of the Bishops' Bible, some of the Romanist refugees to the Continent established an English college at Douai, in Flanders This city was the seat of a university founded by Philip II of Spain in 1562, and was an important Continental center of English Roman Catholicism The founder of this English college, William Allen, was an Oxford man and a canon under Queen Mary. He projected the plan of producing an English Bible for English Roman Catholics. The translation of the work, however, was prosecuted under the oversight of Gregory Martin, another Oxford graduate. During the progress of the work political upheavals compelled the removal of the college from Douai to Rheims in 1578 By 1582 the entire work of translation had been completed, and the New Testament section published. The next year after its appearance William Fulke printed a sharp rejoinder to Martin's controversial marginal notes in the New Testament In 1589 he issued in parallel columns the Rheims New Testament and that of the second edition (1572) of the Bishops' Bible together with his comments This was very popular for a time. In 1593 the college, being compelled to leave Rheims, returned to Douai Here the translation of the Old Testament, hitherto unprinted for lack of funds, was published in 1609-10 Hence this is called the Douai Version. The New Testament was reprinted three times between its first appearance in 1582 and 1750, and the Old Testament once—thus there was a receding demand for them.

The Douai Version (1609-10) carries this on its title page: "The Holie Bible, Faithfully Translated into English out of the Authentical Latin" A comparatively long Preface apologizes to the reader for the production and publication of such a version, assigning as a reason the prevalence and widespread use of various heretical and false versions To counteract these menaces to the church of Rome, and to vindicate the good name of Roman Catholic scholarship, this particular version, well fortified with controversial notes, was issued

As stated on the title page, the Douai Version is a translation "from the authentical Latin," the Vulgate, because "it is the same which St.

Augustine so commendeth . . ." and was declared by "the holy Councel of Trent . . . to be authentical, . . . because "the Adversaries them selves, namely Beza, preferre it before al the rest" These, among ten reasons, are assigned by the New Testament translators for the use of the Vulgate as the original, or basis, of their work. No acknowledgment whatever is made to the various English versions that had appeared, though the resemblance to the Genevan is often striking Some use is said to have been made of the Hebrew and Greek originals, but it was slight and the result of small value

The translation itself is extremely literal; even where the Latin is obscure, its confusion is faithfully carried over into English. The translators say "We presume not in hard places to mollify the speeches or phrases, but religiously keep them word for word, and point for point, for fear of missing, or restraining the sense of the Holy Ghost to our fantasy." The adoption of such a policy carried over into English words and phrases that are stiff, formal, wooden, and often meaningless The Psalter is the most defective part of their Bible, for its translation was made not from Jerome's Latin translation, but from his second revision of the Old Latin, that is found incorporated in the Latin Bible adopted by the Council of Trent

The Rhemish New Testament, however, mainly through Fulke's publication, exercised some influence in the preparation of the King James Version of 1611, in which many of its Latinisms were adopted.

CHAPTER XXII

The King James Version of 1611

THE reign of Queen Elizabeth (1558-1603) was replete with great events. In the religious sphere we have (1) the appearance (1560) of the Geneva Bible that soon attained large popularity and use; (2) the publication (1568) of the Bishops' Bible that immediately displaced the Great Bible as the ecclesiastical version in use in the churches; (3) the Rhemish New Testament (1582) as the product of the English Catholic college at Rheims, Flanders, and its completion, the Douai Old Testament (1609-10) at Douai; (4) the tolerance enjoyed by the reform party in England, securing for it practically unrestricted growth The two events in the political sphere that contributed to the success and liberties already achieved were the execution of Mary Stuart (1587) and the overwhelming defeat of the Spanish Armada in 1588. In the literary world there arose a galaxy of scholars and writers which has made the period unique in England's history and given the language a purity, style, and beauty that have never been surpassed by any subsequent age Among these worthies may be mentioned Shakespeare, Spenser, Bacon, Hooker, Jonson, and Richard Hakluyt The religious and intellectual forces set to work stirred up and molded the desires, aspirations, and endeavors of the Englishmen of the close of the sixteenth century Scholarship had achieved a high standard of excellence and was not satisfied with anything small or less than the best.

James I came to the throne in 1603. His early life and training had made him a student of the Bible He had even tried his hand at authorship, having written a paraphrase of the book of Revelation and translated some of the Psalms The beginnings of the movement that ended in the translation of the so-called "Authorized Version" were apparently unpremeditated King James had summoned a conference to meet at Hampton Court in January, 1604, to consider complaints

by the Puritans. The circumstances are thus described in the Preface of the Authorized Version

. the very historical truth is that upon the importunate petitions of the Puritans, at his Majesty's coming to this crown, the conference at Hampton Court having been appointed for hearing their complaints when by force of reason they were put from all other grounds, they had recourse at the last, to this shift, that they could not with good conscience subscribe to the Communion [Prayer] book, since it maintained the Bible as it was there translated [in the Great Bible], which was, as they said, a most corrupted translation And although this was judged to be but a very poor and empty shift, yet even hereupon did his Majesty begin to bethink himself of the good that might ensue by a new translation, and presently after gave order for this translation which is now presented unto thee

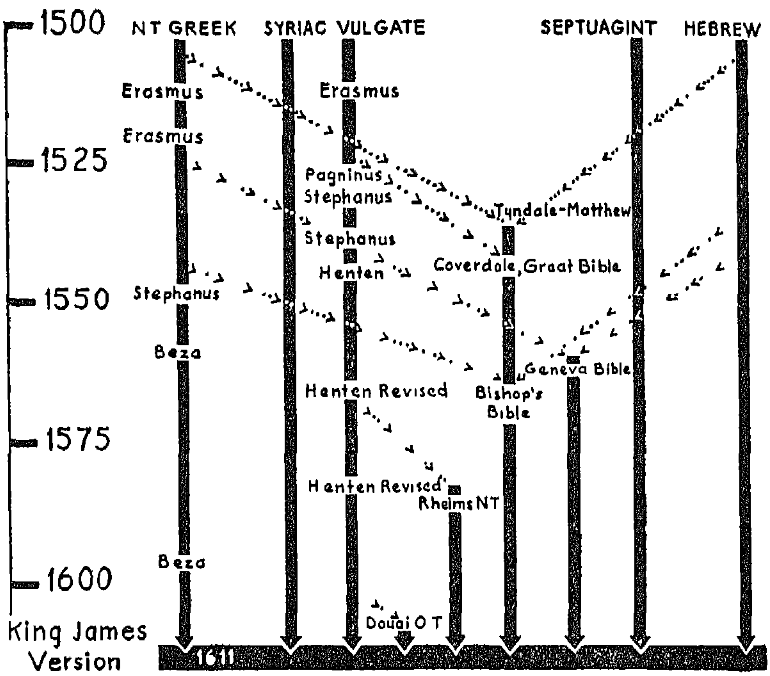
The recommendation for a new revision was made to the conference by Dr. John Reynolds, president of Corpus Christi College, Oxford. His examples of "a most corrupted translation" were cited from the Great Bible and the Bishops' Bible, for from the translation of the former of these the Prayer Book had been constructed.

So far as is known the conference adjourned without taking any definite steps toward meeting the issue of the Puritans. But the strong words of the Oxford president had been sown in fruitful soil.

The charge of the Puritans that mistranslations of the Scriptures were found in the Prayer Book was the first definite step toward a revision As the statement from the Preface indicated, James I was thoroughly in accord with the idea of a new revision of the Bible Although he had been brought up on the Geneva Bible and had used it in his Biblical studies, he had now come to adopt the viewpoint of the bishops, and his attitude is reflected in his words recorded by William Barlow, Dean of Chester, "but the worst of all [the translations] his Maiestie thought the Geneva to bee" James therefore entered heartily into the preparation and execution of a plan to provide a uniform translation "by the best learned in both the Universities; after them to be reviewed by the bishops and the chief learned of the church"; to be ratified by the Privy Council, and by royal authority.

James seemed to regard this as the opportunity of his life to do a popular and permanent piece of work on the Bible. His own Bible-trained spirit and his theological turn of mind made the whole enterprise congenial to him. The extemporized suggestion of Dr

Reynolds soon sprang forth into full fruition It is not known with whom James made all the plans and arranged all the details But about six months later, not only the general plan of procedure but the list of scholars who were to do the work had been fully prepared By July 22, 1604, James wrote to Bishop Bancroft that he had "appointed certain learned men to the number of four and fifty for the translating of the Bible" The only prerequisite for the position of translator seems



THE PRINCIPAL SOURCES EMPLOYED BY THE TRANSLATORS OF KING JAMES VERSION OF 1611

to have been proved efficiency as Biblical scholars. The list included Anglican churchmen, Puritans, and laymen. Though James's letter mentions fifty-four, the list that has been preserved contains only forty-seven. The discrepancy between the original number and the actual workers is supposed to be accounted for by resignations and deaths between the time of appointment and the time when the real work began.

The revisers were organized into six groups—two at Westminster, two at Oxford, and two at Cambridge. Each of the six groups worked on a specified portion of Scripture, separately at first The Westminster group revised Genesis to II Kings inclusive, and Romans to Jude inclusive; the Oxford group took Isaiah to Malachi inclusive, and the Gospels, the Acts, and the Apocalypse, the Cambridge group revised I Chronicles to Ecclesiastes inclusive, and the Apocrypha.

The competency of the revisers was undoubted. Nevertheless, such an array of scholarship could not do the work harmoniously without stringent rules. To guide them fifteen specific rules were provided by the scheme for work Some of the most important things required were that (1) the Bishops' Bible should "be followed, and as little altered as the truth of the original will permit", (2) the old ecclesiastical words should be retained; (3) there were to be no marginal notes except for the citation of parallel passages, of "suitable" alternative translations, of different readings found in "good copies," and of "the more difficult Hebraisms and Graecisms"; (4) whenever Tyndale's, Matthew's, Coverdale's Whitchurch's (the Great Bible, here named after one of its printers) or the Geneva translation, agreed better with the original text than the Bishops' Bible, it was to be used It was provided, too, that a comparison of translations of each individual translator with every other one in each company should be made, and when any book was completed by any group it was to be sent to all the other groups for review and suggestion Translators, too, were authorized to call on any other scholars outside of the regular list, if they deemed it wise so to do. Thus every man of the entire company of forty-seven passed upon the work of every other man in the company.

Very little is known as to the strictness with which the fifteen specifications were followed. It seems evident that there must have been practical harmony in their methods of procedure, for the work sped on at a commendable rate until completed.

The group work having been finished, two members of each of the three companies were chosen to pass upon the final revision for the press in London It is said that a copy of the whole Bible was sent to London by each of the three companies. The six final revisers thus chosen put the finishing touches upon the work submitted by the

three companies, and made the final preparations for the press. This part of the process does not seem to have been carried out too well.

The entire time for carrying out the great enterprise is sometimes divided into two periods. (1) The first three years (1604-07) were occupied in perfecting the preliminary arrangements and, on the part of some of the translators, in carefully working over in private study the material soon to be handled by the entire body of revisers. (2) The next two to three years were consumed in the individual and co-operative labor of the six groups of revisers, during which the revision work was finished Then the following nine months were occupied upon the final revision in London.

In 1611 the version appeared from the press of Robert Barker, in a large folio volume that in appearance, both external and internal, was very like the Bishops' Bible. The type, chapter and verse divisions, chants and tables, running titles, and chapter summaries were similar An effusive dedication to King James was, of course, included; and a long and learned Preface was contributed by Miles Smith, one of the translators. It explained the purpose of the translation and reviewed the controversy with the Roman Catholic church regarding the desirability of an English Bible. Unfortunately this Preface is now generally omitted by publishers, to the serious detriment of understanding and appreciation of the version Professor Edgar J Goodspeed sought for years to have this practice corrected, but failed. Accordingly he republished the Preface in a monograph under its original title, *The Translators to the Reader*, he presented the text in facsimile and transcription, and provided with a suitable introduction. Some brief excerpts will illustrate its temper and, perhaps, induce the reader to explore farther the motivations and principles of the great seventeenth-century translators.

But now what piety without truth? what truth (what saving truth) without the word of God? What word of God (whereof we may be sure) without the Scripture? The Scriptures we are commanded to search John 5 39 Isa 8·20 They are commended that searched and studied them Acts 17 11 and 8 28, 29 If we be ignorant, they will instruct us, if out of the way, they will bring us home, if out of order, they will reform us; if in heaviness, comfort us, if dull, quicken us; if cold, inflame us *Tolle, lege, Tolle, lege,* Take up and read, take up and read the Scriptures, (for unto them was the direction) it was said unto S Augustine by a supernatural voice . .

Many men's mouths have been open a good while (and yet are not stopped)

with speeches about the Translation so long in hand, or rather perusals of Translations made before and ask what may be the reason, what the necessity of the employment Hath the Church been deceived, say they, all this while? Hath the sweet bread been mingled with leaven, her silver with dross, her wine with water, her milk with lime? (*Lacte gypsum male miscetur* saith S Ireny) We hoped that we had been in the right way, that we had the Oracles of God delivered unto us, and that though all the world had cause to be offended and to complain, yet we had none . . . Thus certain brethren Also the adversaries of Judah and Jerusalem, like Sanballat in Nehemiah, mock, as we hear, both at the work and the workmen, saying . Was their Translation good before? Why do they now mend it? Was it not good? Why then was it obtruded to the people? We will answer them both briefly and the former, being brethren, thus with S Jerome, *Do we condemn the ancient? In no case but after the endeavors of them that were before us we take the best pains we can in the house of God* And to the same effect say we, that we are so far off from condemning any of their labors that travailed before us in this kind either in this land or beyond sea . that we recognize them to have been raised up of God, for the building and furnishing of his Church, and that they deserve to be had of us and of posterity in everlasting remembrance

Now to the latter we answer, that we do not deny, nay we affirm and avow, that the very meanest translation of the Bible in English, set forth by men of our profession . containeth the word of God, nay, is the word of God .

Yet before we end, we must answer a third cavil and objection of theirs against us, for altering and amending our Translations so oft, wherein truly they deal hardly, and strangely with us For to whomever was it imputed for a fault (by such as were wise) to go over that which he had done, and to amend it where he saw cause?

But it is high time to leave them, and to show in brief what we proposed to ourselves, and what course we held in this our perusal and survey of the Bible Truly (good Christian Reader) we never thought from the beginning, that we should need to make a new Translation, nor yet to make of a bad one a good one, but to make a good one better, or out of many good ones, one principal good one, not justly to be excepted against, that hath been our endeavor, that our mark To that purpose there were many chosen . If you ask what they had before them, truly it was the Hebrew text of the Old Testament, the Greek of the New These are the two golden pipes, or rather conduits where-through the olive branches empty themselves into the gold Saint Augustine calleth them precedent, or original tongues . .

The original title page of the version read· "The Holy Bible, Contayning the Old Testament and the New· Newly Translated out of the Originall tongues; & with the former Translations diligently compared and revised by his Maiesties speciall Commandment. Appointed to be read in Churches"

However, the new "translation," as has already been mentioned, was

really a revision based on the Bishops' Bible, with free use made of the Genevan, the Rheims New Testament, and the material of Tremellius (1579), Beza (1556, 1565, and 1598), and other Latin versions When we consider that the Bishops' Bible was a slightly revised edition of Tyndale's translation we can appreciate better his far-reaching contribution to the history of the English Bible and also the basic unity that links together all our great versions since the Reformation King James's translators had no standard, or "received" Hebrew text, hence they were compelled to use the four current Hebrew Bibles and the Complutensian and Antwerp Polyglots. For the Greek New Testament they had Beza's improvements on Erasmus and on Stephanus. The Old Testament far surpassed any English translation in its faithful representation of the Hebrew text, and did it in a simplicity of language admirably representative of the Elizabethan age The New Testament is so expressive in language and form that it is even said to surpass the original Greek as literature

From the activity of King James in connection with the production of the revision it became widely known as the "King James Version" or the "King's Bible." But eventually it came to be designated as the "Authorized Version." It is true, as we have seen, that the title page read "Appointed to be read in Churches" and that the version was prepared under the direct order of the King and his advisers, but there is no record of any order, act, or decree, by Parliament, convocation, privy council, or King, authorizing or sanctioning its use as implied by the title page, or the title in general use But the King in 1604 had specified that "a translation be made of the whole Bible, and only to be used in all Churches of England in time of Divine Service."

Notwithstanding its royal and scholarly paternity, its birth occurred without any blast of trumpets, any royal edict or public proclamation. It seems that the mere fact of its national character was regarded as a sufficient guarantee of its rapid adoption and use in the churches and in private reading Some claim is made that an act of formal authorization occurred and that the record was destroyed by fire. At any rate, the King's name, and the eminence of the many great scholars who brought about its production, gave it an immediate hearing. It met opposition, of course, as does any new revision, even in these days. But it soon outran in popularity the Bishops' Bible, that had not been

reprinted since 1606. With the Genevan Version it waged a running fight for a full half-century But character and merit won the contest, and the "Authorized Version" completely took the field

The first edition appeared in 1611. In 1613 another edition was printed which contained more than four hundred variations from the first, and differed in several other features A second issue partly printed in 1611 and partly in 1613 containing a few variations and using some leaves printed for the first issue has caused considerable controversy as to which came first The two are sometimes called the "He" and "She" Bibles from their respective translation of the pronoun in Ruth 3 15 The former is generally considered to be the first published edition The sharp criticisms that were hurled at the new version, largely by Hugh Broughton, whose irascible disposition had deprived him of a place, as his scholarship deserved, on the translation committee, forced a revision in 1629. Another, on a minor scale, was made in 1638 Then in 1653 the Long Parliament submitted a bill calling for revision The reasons that lay back of the bill were in part the errors, mainly printers' but some in translation, and also the so-called prelatical language of the version. The matter went so far as to be put into the hands of a committee appointed especially to take charge of the scheme. Some preliminary work was begun, but the dissolution of Parliament put an end to the project. Some of the most noted men of the century were on the committee Among these may be named Brian Walton, Bishop of Chester, who, with the active support of Oliver Cromwell, edited the colossal Polyglot Bible, and also through his arduous textual studies pointed out the variations existent between manuscripts, particularly of the New Testament Cudworth, the eminent theologian and philosopher, was another; his work has given him a permanent place in history Private attempts at either betterment or radical revision were not infrequent, but they remained private and rarely exercised any large influence

The most important changes occurred in the eighteenth century. In 1762 Dr Thomas Paris published an extensive revision at Cambridge, and in 1769 Dr Benjamin Blayney, after about four years of work, brought out another at Oxford. The latter work included much modernization of spelling, punctuation, and expression, and apart from minor changes such as correction of printing errors (of which there

were many) it represents the generally current form of the King James Version.

The Cambridge Paragraph Bible of 1873 gave a list of variations from the text of the King James Version as it first appeared in 1611 that covered sixteen closely printed pages. The Oxford Parallel Bible of 1885 made a selection from these variants and put them in the margin.

The original instructions to the revisers regarding marginal notations were not entirely observed. The first edition contained about nine thousand cross references and some eight thousand other marginalia, about two-thirds of which would qualify as more literal representations of the original text and most of the remainder as alternative translations together with a few, perhaps 250, textual variants But five or six hundred other notes were used, mostly explanations of names, weights, coinage, and the like, together with a few attempted harmonizations of the text and miscellaneous information (especially in the Apocrypha). Notes of an exegetical nature were, however, rigorously excluded. There was, in fact, more such interpretation in the implications of the running titles and chapter summaries. In later editions the notes were gradually and greatly increased in number, beginning especially with an edition of 1649; by the time of the Blayney revision they totaled some 65,000, about half of which were cross references.

Bishop Lloyd's Bible in 1701 was the first to incorporate in it the Biblical chronology that had been worked out by Archbishop Ussher and published in 1650-54. This system, which fixed the creation at 4004 B C, was generally followed by Biblical scholars until recent times, when discoveries have shown conclusively that it is worthless in all of its earlier calculations, and erroneous in most of its later dates before the fall of Samaria (722 B C.).

For almost three centuries the Authorized, or King James, Version has been the Bible of the English-speaking world. Its simple, majestic Anglo-Saxon tongue, its clear, sparkling style, its directness and force of utterance have made it the model in language, style, and dignity of some of the choicest writers of the last two centuries. Its phrasing is woven into much of our noblest literature; and its style, which to an astonishing degree is merely the style of the original authors of the

Bible, has exerted very great influence in molding that ideal of simplicity, directness, and clarity which now dominates the writing of English. It has endeared itself to the hearts and lives of millions of Christians and has molded the characters of leaders in every walk of life. During all these centuries the King James Version has become a vital part of the English-speaking world, socially, morally, religiously, and politically.

CHAPTER XXIII

The Revised Version

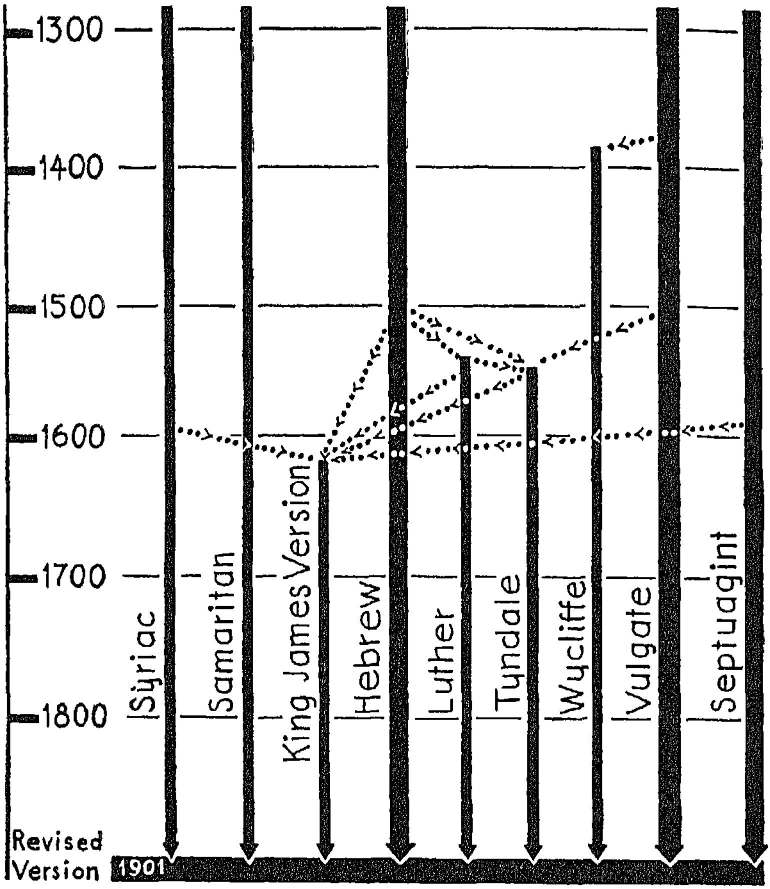
THE Authorized Version held undisputed sway in the English-speaking world for more than two centuries. There were only occasional efforts to improve it, and they were personal and unauthorized. In fact, after the abortive effort of the Long Parliament to secure a new translation, the main ecclesiastical and national interests pursued other lines of action. The early half of the eighteenth century was submerged religiously in controversies that dealt with theological questions more from a dogmatic and philosophical point of view than from that of the Scriptures. The second half of the century was largely occupied by the English in political and economic questions. The ecclesiastical life of the nation was at a low ebb, awaiting some thunderbolt of discovery or invention to arouse it to new energy and action. The nineteenth century saw new movements in every line of activity Discovery, invention, scholarship, politics, religion—all arose to new life as the century advanced, promising not only larger action but a wider horizon for the future

Biblical scholarship, though confined to comparatively few men, had in the interval made progress. On the textual and philological side, with which we at the moment are most concerned, the most valuable contributions were made by Kennicott, De Rossi, and Davidson, who collated and published critical materials bearing upon the Massoretic text of the Old Testament. The work of Mill, Bengel, Wetstein, Griesbach, and others in the collection of thousands of variant New Testament readings has been discussed in Chapter XV along with the contribution of Lachmann, Tischendorf, Tregelles and Hort in attempts to reconstruct the early text. The first critical use of some of the oldest manuscripts, like Vaticanus, Alexandrinus, and Beza, opened the eyes of scholars to the immense possibilities of improvements in translations of the Bible The number of scholars at work

on the Biblical text was increasing, and the material which they could use, particularly of the New Testament, was multiplying rapidly as ancient manuscripts were dug out of the old libraries of Europe and the monasteries of the East. These finds, and especially the dramatic discovery of Codex Sinaiticus in 1844-59, revealed and emphasized some of the most glaring defects of the Authorized Version and initiated efforts to produce new revisions or translations of parts or of the whole Bible Professor Goodspeed has estimated that close to a hundred such productions, mostly New Testaments, were published in the two and a half centuries between the King James and the Revised versions, the majority of them in the nineteenth century. In 1857-61 five English clergymen published translations of the Gospel of John and Paul's Epistles. Of these translators, Dean Alford and Bishop Ellicott were afterwards chosen to be members of the Committee of Revisers. Four English scholars, Drs Gotch, Davies, Jacob, and S G Green, prepared a Revised English Bible. G. R. Noyes, of Harvard University, published a translation in 1869, with some notes by Ezra Abbot in 1870 The American Bible Union, too, gathered together a choice Biblical exegetical library at large expense, and prosecuted a new translation of the Bible The New Testament and part of the Old were published in 1860-71 by T J Conant, a leader in American Biblical scholarship. All these efforts on both sides of the sea were indicative of the drift of scholarly opinion and movement in the last half of the nineteenth century. The sentiment for a new revision of the Bible was steadily advancing

The first official move in this direction was made February 10, 1870, in the Upper House of the Convocation of Canterbury. Bishop Wilberforce (of Winchester) presented a resolution that a committee of both Houses be appointed to report on the desirability, on the basis of certain principles named in the document, of a revision of the Authorized Version of the New Testament By an amendment the Old Testament was included This important resolution was seconded by Bishop Ellicott (of Gloucester and Bristol), and it was adopted Two such names at the head of such a proposal were sure to give it a strong impetus. The committee provided for in the resolution was appointed to report in the following May. After due consideration it almost unanimously recommended, and both Houses of Convocation adopted, a resolution

that a revision should be undertaken It also provided that a body of its own members should be nominated to undertake the work of revision, who should "be at liberty to invite the co-operation of any, eminent for scholarship, to whatever nation or religious body they may



MAIN SOURCES OF OLD TESTAMENT OF THE REVISED VERSION, 1901

belong." The Church of England took the lead in the management of the movement, and a committee of sixteen men was appointed to carry out the letter and spirit of the resolution This committee decided to invite about forty Biblical scholars to become members of the Revision Committee. With Episcopalians in the lead, the committee was

representative of nearly all evangelical bodies, Baptist, Congregationalist, Methodist, Presbyterian, and Unitarian But no Roman Catholics accepted. The full number of this committee, for both Testaments, was fifty-four, the same as that originally named on King James's Revision Committee

According to the Preface of the Revised Version, some of the general principles which were agreed to on May 25, 1870, by the Revision Committee of Convocation for their guidance were "(1) To introduce as few alterations as possible into the Text of the Authorized Version consistently with faithfulness, (2) to limit as far as possible, the expression of such alterations to the language of the Authorized and earlier English Versions; (4) that the Text to be adopted be that for which the evidence is decidedly preponderating; and that when the text so adopted differs from that from which the Authorised Version was made, the alteration be indicated in the margin, . . (7) to revise the headings of chapters and pages, paragraphs, italics, and punctuation." A discussion of the method of carrying out these instructions follows likewise in the same Preface

The general committee was organized into two companies, the Old Testament and the New Testament, of twenty-seven members each. The New Testament Company was formally organized and began work in the famous Jerusalem Chamber of Westminster Deanery, London, June 22, 1870, and on the thirtieth the Old Testament Company began its long and arduous toil Each company was required to work through its portion of the Bible twice. The companies met together in sessions at stated intervals, generally for six hours a day; the Old Testament Company usually met in ten-day sessions five times in the year, but the New held meetings for four days every month except August and September. The procedure in the meetings has been officially related thus·

> In the first Revision it was the practice for the Secretary to read over each verse, first in the original and then in the Authorised version the proposals for change were then taken Each proposal was moved, and if seconded was discussed and voted upon, the decision in the first Revision being by a majority only In the second Revision, the Secretary read out in order the changes which had been made at the first Revision, if these were unchallenged they were allowed to remain, otherwise they were put to the vote and affirmed or rejected according as they were or were not supported by the requisite majority of

two-thirds In the second Revision new propositions could only be made by special permission of the Company, and discussion was limited, as far as possible, to exceptional cases In the final review, which was in reality the completion of the second Revision, the Company employed themselves in making a general survey of what they had done, deciding upon reserved points, harmonizing inconsistencies, smoothing down roughnesses, removing unnecessary changes, and generally giving finish and completeness to their work Everything in this final survey was decided by the vote of a majority of two thirds

In 1870 Dr. Angus visited America and, at the request of Bishop Ellicott, held a conference with some American scholars on the possibility of co-operation with the British Revision Committee. A plan of such co-operation was framed, and a list of American Biblical scholars representative of the leading religious bodies and denominations of the country was drawn up The British Revision Committee approved the plan and list of names. Accordingly a body of thirty men was organized December 7, 1871, which first began active service October 4, 1872, as Old and New Testament companies, after the pattern of the British organizations. These two American companies, after beginning their service, met for committee work one session every month, except July and August, in the Bible House in New York Of the New Testament Company, ex-President Woolsey of New Haven was chairman, and Professor William Henry Green, of Princeton, occupied the same position for the Old Testament Company. The details of the plan of co-operation with the British Revision Committee were not easily arranged or adjusted It was not until 1875 that a mutually agreeable and workable scheme was concluded. Dr. Philip Schaff, leader in the formation of the American group, gives a clear statement of the substance of that agreement in his valuable *Companion to Greek Testament and Revised Version* (pp. 400-401).

The English Revisers promise to send confidentially their Revision in its various stages to the American Revisers, to take all the American suggestions into special consideration before the conclusion of their labors, to furnish them before publication with copies of the Revision in its final form, and to allow them to present, in an Appendix to the Revised Scriptures, all the remaining differences of reading and rendering of importance, which the English Committee should decline to adopt, while, on the other hand, the American Revisers pledge themselves to give their moral support to the authorized editions of the University Presses, with a view to their freest circulation within the United States, and not to issue an edition of their own, for a term of fourteen years.

The New Testament companies were naturally the first to complete their task The whole time devoted to the work by the British Company was ten and one-half years The first revision was completed at the end of six years. The second by the end of two and one-half more The remainder of the time was occupied in the consideration of the suggestions from America on the second revision, and of many details, and of special questions that had arisen. The average attendance for the whole time was sixteen each day, out of a total original membership of twenty-seven, which however was actually reduced by death or resignation to twenty-four.

Thus after about four hundred days of sittings on their work the British New Testament Company affixed their names to the Preface to their version November 11, 1880 On May 17, 1881, Bishop Ellicott, one of the two original movers of the resolution in 1870 to undertake the work of revision, laid the first copy of the Revised New Testament before the Convocation of Canterbury, and then gave in a brief address an account of the production of the volume. On that Tuesday, May 17, the Revised New Testament was published and put on sale in England, and on Friday, May 20, in the United States

The reception accorded the work was unprecedented in the history of the Bible One million copies were ordered in advance from the Oxford University Press, and nearly as many from that of Cambridge Dr. Schaff states that a telegram from London, May 21, 1881, reported the sale of two million copies of the Revised New Testament in that one city The pressure for copies in New York and Philadelphia began before daybreak of May 20. The agent of the Clarendon Press in New York alone sold 365,000 before the end of the year, largely, however, during the first few days Other agents in Philadelphia sold about 110,000 copies. Within a few days after its appearance more than a score of reprints of different kinds were thrown on the market Two firms sold during the summer of 1881 about 165,000. It is estimated that almost three million copies of the Revised New Testament were sold in England and America in all editions within less than one year after its publication. In addition to these recorded sales there were various periodicals and papers that did large service, by the publication of either a part or the whole of the new volume. The Chicago *Tribune* and the Chicago *Times* published the book entire in their

issues of May 22, 1881 The Gospels, Acts, and Romans, containing about 118,000 words, were telegraphed from New York, and the remainder of the book was set up from copies received in Chicago on the evening of May 21

Thus the Revised New Testament sprang at once into a full-fledged popularity and was widely and, for a time, eagerly read by the religious and literary elements of the English-speaking world.

The work of revising the Old Testament was greater. It was not concluded until 1884, fourteen years after the beginning of the task. This space of time wrought many changes in the personnel of the British Old Testament Company. Only fifteen of the original twenty-seven lived to see the completion of their work; ten had died and two had resigned, their places being filled by others until 1875, after which no one was added to the company. The revision was completed in eighty-five sessions, ending June 20, 1884; it occupied 792 days, or more than two and one-half years of working days

The British Company had gone twice through the Pentateuch before co-operation with the American Company had been arranged. The first revision of the British Company was submitted to the American, and in every case except that of the Pentateuch the British had the benefit of their criticisms and suggestions before taking up their second revision. The second revision was also submitted to the Americans, whose latest thoughts were in the hands of the British Company at their final review. As in the case of the New Testament, the Revised Old Testament carries an Appendix that contains many of the American preferences which were not adopted by the British Company. The Preface of the completed Old Testament was signed by the British Old Testament Company in Jerusalem Chamber July 10, 1884; and the entire Revised Version appeared bound in one volume May 19, 1885. Its reception was general, cordial, and thoughtful. There was no such phenomenal, popular demand for the entire Revised Bible as there had been just four years before for the Revised New Testament. But there was a healthy and encouraging market for this result of long years of toil by eminent Biblical scholars.

The Old Testament text was the Massoretic Hebrew, substantially the same as that used by the company that produced the Authorized

Version. The revisers profited by collations of Hebrew manuscripts and by readings of the ancient versions. But it was a cautious revision, and no one need feel surprise that there are so few striking changes from the text of the Old Testament of the King James Version. But the Greek text of the New Testament used by the revisers was much better than that used by King James's revisers. Since 1611 all the great New Testament manuscripts (Chapter XII) had come into scholarly use As members of the British New Testament Company were Drs. Scrivener and Hort, two of the most able textual critics of the New Testament The text used by the revisers was the result of a critical examination and estimate of all the known Greek New Testament manuscripts The differences of the Greek text used by the revisers from that used for the King James Version, according to Dr Scrivener's notes (as cited by Dr Schaff, *Companion,* p. 419, note) are apparent in 5,788 readings Only about one in four of these makes any material difference in the substance of the text Another estimate placed the number of changes in the English text at 36,191, or an average of four and one-half changes in each of the 7,960 verses In other words, the Revised Version of the New Testament differs in more than 36,000 places from the Authorized Version.

A comparison of the two Testaments in the King James and the Revised versions reveals important features In 1611 the Hebrew language was not perfectly understood, while the Greek had been well mastered. Consequently the Hebrew Old Testament was often inaccurately rendered into English, beautiful English though it was, while the New Testament was a fairly good and accurate translation of the Greek text. But the Old Testament of the Revised Version, although based on practically the same Hebrew text as that used for the 1611 version, is a much clearer translation of the Hebrew, making sense out of many passages that were obscure in the King James. This improvement is very marked in the prophetical and poetical books, where obscurities, as we all know, were frequent.

While the greatest gain in the New Testament was, as we have indicated, in the employment of a superior Greek text, yet it was also true that a more discriminating recognition of the principles of the grammar and syntax of New Testament Greek introduced valuable

improvements, particularly in certain difficult passages of the Pauline letters.

The Authorized Version has been in use over three hundred years and, of course, contains scores, even hundreds of words and expressions whose meanings have become greatly modified, or entirely changed. One of the urgent tasks of the revisers was to weed out these obsolete words, archaisms, and expressions that do not now mean what they did originally, or what the original text is now seen to mean; certain terms, too, which in the course of time had become offensive to good taste, especially for public reading, needed modification.

The revisers were required to translate the originals into modern, modest, and yet forcible language that would properly represent the original texts and at the same time give no needless offense to any thoughtful reader. In addition they strove for consistency; they undertook to translate, as far as possible, the same original by the same English word Under the first principle they made changes such as "Holy Spirit" for "Holy Ghost," "Sheol" or "Hades" for "hell," "strange" for "outlandish," "smooth" for "peeled," "inwards" for "purtenance," "condemnation" for "damnation," "falsehood" for "leasing" The second principle had not been followed by the 1611 revisers; instead, they often used synonyms for the same Greek or Hebrew word, and thus gave variety and beauty to their translation.

The Revised Version possesses other commendable qualities The old separation of chapters and verses has been abandoned in favor of divisions according to sense, and thus the text reads continuously like any other book. Some of the poetical sections in the Old Testament are printed in separate lines corresponding to the original form. Unfortunately the practice is not followed in the prophets, although these books contain a very large bulk of poetry. The version also omitted chapter headings and chronological material, which had come to occupy a prominent place in the Authorized Version and had occasioned much misunderstanding and misinterpretation. Marginal notes constituted a special problem. Early in its work the British Committee appointed a group of its members to consider the advisability of a series of marginal references, they decided, however, that until the version should prove itself, the labor entailed would be premature. Consequently the first edition was devoid of them, although it con-

tained a large number of notes of alternate translations or of variants in the originals. But by 1895 it was felt by the University Presses of Oxford and Cambridge, the publishers of the version, that "an increasing demand, both at home and in America, for an edition of the complete Revised Version with marginal references" warranted the undertaking. A committee was appointed, and in 1898 the annotated edition was published. In it the notes of the former edition became footnotes, while an extensive series of references was placed in the margins. According to the statement of the committee, these were of five classes "(1) Quotations, of exact verbal parallels. (2) Passages referred to for similarity of idea or of expression (3) Passages referred to by way of explanation or illustration. (4) Historical and Geographic references . . . names of persons, places, etc., which recur (5) Passages referred to as illustrating differences of rendering between the Authorized and Revised Versions." *In toto*, the marginal material was greatly reduced from that of the Authorized Version, notwithstanding that some of these classes marked a considerable increase.

The Revised Version was produced through the co-operation of about seventy-five of the leading Biblical scholars of Great Britain and America, who represented the most prominent religious bodies of the two greater English-speaking democracies The age of the King James Version, its antiquated language, and its recognized defects of several kinds were some of the reasons for revision These conditions insured for the Revised Version a hearty welcome from most of the better-trained and more intelligent Bible students of the day. Such readers quickly recognized its merits as more truly representing the original texts and welcomed its clear diction and language according more nearly with the simple, direct speech of today. Nonetheless the version did not meet with immediate approval, nor has it in the sequel won for itself a place of undisputed supremacy. There were critics with sharp pens who found many defects in it; and in much of their criticism, we must admit, they were right. Then too, tender and sacred associations clinging about the King James Version led some readers to regard any change as almost sacrilegious and to combat the abandonment of so precious a Bible for a new and untried rendering Yet, as in the history of earlier versions, all these considerations did not suffice to outweigh for more thoughtful minds the indis-

putable superiority of the Revised Version. Inevitably the King James Version will be put on the shelf as the most venerable and influential among all older English Bibles. The Revised Version, too, will follow it in time, as will every other version that may ever be produced For the growth of a living language, to say nothing of advance in Biblical scholarship, entails that no translation of the Bible can ever be final. It suffices that each serves worthily its day and generation.

The production and merits of the American Standard Revised Version of 1901 deserve also some notice. It will be remembered that an American Revision Committee was not organized until 1871, and that its work did not begin until October 4, 1872, more than two years later than the British Committee. Its task was to pass in review the revisions of the British Committee and to make any suggestions or emendations that seemed to be required from the viewpoint of American scholarship, or of the needs of the American churches. But the actual terms on which the two committees worked together were not formulated until 1875. They agreed that the suggestions of the American Committee should be duly considered by the British Committee before the conclusion of their labors, and that they (the British Committee) should allow the American Committee to present in an Appendix to the Revised Scriptures all the remaining important differences of reading and rendering which the British Committee should decline to adopt This Appendix was to be published in every copy of the Revised Bible during a term of fourteen years. "The American Committee on their part pledged themselves to give, for the same limited period, no sanction to the publication of any other editions of the Revised Version than those issued by the University Presses of England."

The British Committee disbanded soon after the conclusion of its work, but the American Committee continued, for it saw the possibility that an "American recension" of the Revised Version might be desired And this would require much more serious work than a mere introduction of the readings of the Appendix into the text, for these had been prepared under conditions that precluded an expression of the real position of the American Committee

A pressing need for an American revision is seen in the use in the 1885 edition of a large number of words and phrases whose meanings

or spellings are wholly antiquated. Some of these are: "bewray," "grisled," "holpen," "hough," "marish," "pourtray," "sith," "strowed" Then there are many words that are English but not American in meaning. "Corn" means grain of all kinds in England, but only maize or Indian corn in America. "Chargers" are not "platters," but "horses" here. "Traders" are not "chapmen" with us, nor are "merchants" "occupiers." "Fat" is not "vat" here, nor is the "capital" of a column called a "chapiter." Our soldiers are not arrayed in "harness," nor do we take our shoes "to be clouted." What is "go to"? To retain such words in our Bible would necessarily require a glossary to explain them.

Yet the American revision was less drastic than the British edition in its treatment of features external to the text. It restored running headlines in revised form, and included a new set of scriptural cross references The marginal notes were about the same in nature and quantity as the British, except that the citation of Old Testament variant readings based upon versional evidence was reduced to about one-sixth of its former quantity and such citations as remained specifically named the supporting version. The text was also reparagraphed, and the use of punctuation and italics was improved and systematized

Adequate time was provided the American Committee by its agreement with the British Committee to refrain from publication for fourteen years. Consequently the work was well in hand as this period drew to a close; and on August 26, 1901, the version was issued to the public by Thomas Nelson and Sons of New York City Its title page was that of the Revised Version, with the significant additional note, "Newly Edited by the American Revision Committee. A.D. 1901. Standard Edition", thus it has come to be known as "The American Standard Version" It embodied the ripest scholarship of Great Britain and America. The claim made shortly after its publication that "it is the most perfect English Bible in existence" was probably justified. It represented the best scholarship and Biblical learning of its time and was a fitting climax to the great advance in knowledge of the Bible made during the latter half of the nineteenth century The hearty reception given it and the readiness with which it was adopted by all classes of the Bible-reading public were a tribute to

its excellence and to its rich promise for the religious life of our times.

But it was not final; no translation of the Bible ever can be! Even within the relatively brief period since its publication great progress has been made in knowledge of Bible life and times, and specifically of the Biblical languages In part this has come through the remarkable archaeological activity that was a notable feature of scholarly interest in "Bible lands" through the decades between the two world wars But for whatever reason, the American Standard Version already lags behind the scholarship of the present Then too, certain of the methods of the translators which at the time were thought to mark the superiority of the version have come in perspective of the years to be recognized as serious defects The use of the word "Jehovah" as the name of God is a barbaric touch from which better taste has recoiled The name represents no ancient original but roots entirely in ignorance of a feature of Hebrew manuscripts. The only adequate term is "the Lord," dignified as it is by ages of Jewish and Christian use. The consistency of the translators also became a vice; it is a mechanical procedure, and not true translation, to follow rigidly chosen word equivalents Words take on meaning from their context, so that an elasticity of rendering is demanded if the true sense is to be served

Then, strange as it may sound, the American Standard Version was far too conservative; or more strictly, it was uneven in its attitude to the King James, changing when often the old was better, and yet conforming its rendering as a whole to the form of seventeenth-century scholarship A single illustration will suffice. Modern knowledge of the existence and nature of poetry in the Old Testament dates from the publication in 1753 of Bishop Lowth's *De Sacra Poesi Hebraeorum*. The matter had been set forth by Rabbi Azariah de Rossi two centuries earlier, but had attracted little attention. From the time of Lowth, however, it has been common scholarly knowledge. King James's translators, then, were nearly a century and a half too early to profit by this important discovery. Their rendering of the Psalms and other poetry, notably of the prophetic books, is thus set up uniform with the certainly prose parts of the Old Testament. The vivid imagery of Hebrew poetry and its characteristic form are such that, in spite of the translators, a poetic quality attaches to considerable

of their rendering. Nonetheless, it was essentially a prose translation of Hebrew poetry. The American translators effected a great improvement when they printed the Psalms in lines corresponding to the original form, yet beyond considerable revision of the wording, their actual rendering is just as prosaic as is that of the Authorized Version. Their responsibility demanded a completely new translation created in full recognition of the poetic nature of the original and dominated by a feeling for its forms and imagery Such a course was too radical for half a century ago; the translators gave only a verbal modification of the seventeenth-century prose.

Reviving interest today in Jewish literature outside the canon impels mention that the British Revision Committee did not limit its work to the Old and New Testaments but went on to revise the translation of the Apocrypha, and published its version in 1894.

CHAPTER XXIV

Recent and Modern-Speech Translations

ABOUT the time when the work of the American Committee of Revision was drawing to a conclusion, astonishing discoveries of ancient Greek papyri were made in Egypt, especially in the Fayum. They have had a revolutionary influence upon the study of the Greek of the New Testament For centuries this dialect had presented a vexing problem, since it was neither classical Greek nor the Greek of the Septuagint. But now it was shown to be the vernacular Greek of the papyri—the colloquial language of common people in Egypt and perhaps in Palestine in the first and second centuries. For these papyri contain letters, contracts, leases, decrees, diaries, and many such private and public documents, written in the everyday Greek language of the people. Obviously they have profoundly altered the study of New Testament grammar and syntax In addition they have toned down and clarified the formerly rather stilted classical interpretation of New Testament language In other words, interpreters, finding that they were handling colloquial words and idioms, have been led to rethink the New Testament in the everyday speech of the common man.

These developments conduced strongly to fresh translation of the Bible. It will be recalled that the past fifty years have witnessed also an unparalleled series of discoveries of ancient Biblical manuscripts, some of them of high importance, which have created a keen interest and have focused attention upon the Biblical text. When, further, one recognizes the sense of inadequacy of the revision of 1901 which has become steadily more manifest with the passage of time, it does not seem at all strange that ours has been one of the notable periods of activity in translation both of the New Testament and of the Bible as a whole Several of these translations have undertaken to exploit the colloquialism revealed by the papyri and so to produce "modern-speech" versions, but others have been of a more traditional character.

Out of the total a few that for various reasons have attracted most attention may be mentioned here.

The Spurrell Translation of the Old Testament was an independent translation made by Mrs Helen Spurrell, of London; it appeared in 1885 She was a talented woman, competent in music, painting, and sculpture She learned Hebrew after she had passed fifty years of age, and translated the whole Old Testament from the unpointed Hebrew text. But she did not hesitate to correct the text when the reading of the Samaritan Pentateuch or of the Septuagint seemed to her to warrant change Her style does not vary greatly from that of the King James Version. She adopts "Jehovah" where the King James Version has "LORD." She has caption headings printed in italics at the top of the page Hebrew textual and explanatory notes are found at the bottom of the page. Poetry is put in verse form The verse numbers, sometimes combined, as 3/4, are found in the text. Some other peculiarities of printing will be apparent to those who understand the Hebrew text.

The Bible in Modern English by Ferrar Fenton was published in London, New Testament 1895, Old 1905. It was "translated into English direct from the original Hebrew, Chaldee and Greek languages." The order of books of the Old Testament is that of the Hebrew Bible The text is broken up by the insertion of subject headings, but the chapter and verse numbers are printed on the margins The translation is the modern English of Great Britain It has some peculiarities of translation and spelling. The word rendered "Jehovah" in the American Standard Version is almost everywhere the EVER-LIVING. Micah is spelled "Mikah," and Zechariah is "Zakariah." The poetical portions are printed in verse form The New Testament of this Bible is Fenton's second edition, "newly translated direct from the accurate Greek text of Drs. Westcott and Hort." Quotations from the Old Testament are printed in capitals The translation is accompanied by occasional introductory textual and explanatory notes, useful to the reader. Though quite popular for a time, its erroneous and inaccurate renderings have rather damaged its earlier favor

Toward the middle of the past century an agitation arose in this country for an "immersion" version, to be used among the several immersionist denominations. In 1850 the American Bible Union was

organized for this purpose and initiated plans for a revision of the whole Bible Job was published in 1856. In the years 1862, 1863, and 1864 the New Testament was issued in three successive volumes that then were united in a single edition in 1865 It used the word "immerse" throughout where the Authorized Version had "baptize." The publication of the Old Testament began with Genesis in 1868 and dragged along variously until lack of funds brought the project to a halt after 1879 But by 1891 it was revived, when a revision of the New Testament was published Then in 1912 the complete work appeared under the title, *The Holy Bible—An Improved Edition* In sixty years the original impulse had so far moderated that this final edition employs the double rendering, "baptize (immerse)" wherever this rite is mentioned Poetry in the Old Testament appears in verse form There are no subject headings The text is run in solid except for occasional paragraphing The verse number in very small unobtrusive type is set in the text just at the first word of the verse Occasional textual and explanatory but not expository notes appear at the bottom of the page.

The Hebrew text has remained authentic Scripture for the Jews Yet presently the same forces and needs that had impelled the great ancient versions operated in the modern lands of the Jewish dispersion In English-speaking countries the King James Version of the Old Testament was first adapted to Jewish use, but in 1851 a translation into English made by Abraham Benisch was published in England In 1853 Isaac Leeser, an enthusiastic and aggressive American scholar, published in Philadelphia a translation of the Hebrew Bible; then thirty years later *A Jewish Family Bible,* in English and Hebrew, edited by Michael Friedlander, was published in England But Leeser's translation remained the commonly approved version in all the synagogues in the United States, and was even reprinted in England

All these were, it will be observed, private translations, produced by the devotion and enterprise of single scholars Whatever their excellence, the advance of scholarship in course of time dictated an improvement upon even the popular version of Leeser, and, as indicative of the growing importance of Judaism on this continent which has continued to the present, it fell to an American group of Jewish scholars to produce the version which, transcending the others in its merit,

has become a *de facto* authorized Bible of English-speaking Jews. It was in 1888 that the Jewish Publication Society of America was organized; and only four years later it initiated steps toward a new translation The plan as developed was to secure translations of the several books of the Bible (that is, of the Old Testament) by individual allotment to Jewish scholars in Great Britain and the United States, these translations then to be submitted to the critical revision of an Editorial Committee which would carry on discussion with the translators by means of correspondence However, by 1901 it became apparent that the process was far too slow. Nonetheless, it was not until 1908 that the entire scheme was revised and the project taken up with energy A Board of Editors was created, consisting of six scholars representative of the Jewish Theological Seminary of America at New York, Hebrew Union College at Cincinnati, and the Dropsie College at Philadelphia, and with Professor Max Margolis, a seventh member, appointed editor in chief and secretary to the board It devolved upon Margolis to prepare the translations; these were submitted to each member of the board and later discussed in its meetings. Thus by discussion and constant criticism and recriticism, making use of all the relevant ancient and modern translations and literature, the work moved on through seven years Sixteen meetings of the board were held, totaling 160 working days At length at the final meeting in November, 1915, a prayer of thanks was offered "that the great task was completed and that the group which during seven years had toiled together was intact"

The first important modern-speech translation was Weymouth's New Testament, published in London, 1903. The text used was his own *Resultant Greek Testament,* embodying the readings of the majority of textual critics The version, so the Preface says, "is a bona fide translation made directly from the Greek, and is in no sense a revision." And indeed it has so little in common with the King James Version that often they cannot be compared Weymouth is more free than either Moffatt or Goodspeed Some peculiarities of the work are (1) there are subject headings in black-faced type indented at the beginning of a given theme; (2) quotations from the Old Testament are printed in capital letters; (3) chapter and verse numbers are put on the margin; (4) extensive notes in justification of the translation or in comparison

with other readings are found in fine print at the bottom of the page; (5) direct discourse is marked by single quotation marks. The fourth edition of 1924 is provided with introductions to the several literary divisions of the New Testament

The Twentieth Century New Testament is said to have had its origin in the desire of a mother to translate the New Testament into language that her children could understand. She finally succeeded in enlisting the help of about twenty competent scholars, who by means of committees carried the work through to completion No names were given out, and no one received compensation. The basic Greek text was Westcott and Hort. A "tentative edition" was issued in three parts 1898-1900. On the basis of elaborate criticisms the permanent edition was published anonymously in 1904, in London and New York In this New Testament translation the books are arranged in the chronological order determined by the authors under three heads, Historical Books, Letters, and the Apocalypse The letters have been grouped under the names of the writers to whom they are usually assigned, and in each such division in their chronological order Chapter and verse notations are on the margin Subject headings are in black-faced type indented at the appropriate places. Direct discourse is in quotation marks. Quotations or borrowed phrases from the Old Testament are printed in smaller type enclosed by single quotation marks. References to parallel passages and sources of quotations are printed in small type at the bottom of the page

James Moffatt, who in 1901 had issued in Edinburgh a *Historical New Testament*, published a translation of the New Testament in New York in 1913 It is a strikingly independent modern-speech translation, based on von Soden's recently published Greek text; where Moffatt adopts a different reading, he mentions it in a footnote. No subject headings are given. Chapter and verse numbers are printed on the margins. Direct discourse is put in quotation marks Quotations or direct reminiscences of the Old Testament are given in italics.

Yet Moffatt's contribution to Biblical translation did not cease here. In 1924 he astonished the Bible-reading public with a translation of the Old Testament also It was a notable achievement. There have been few scholars who have possessed the competence to produce single-handed a great translation of the entire Bible Indeed, in the

history of the English Bible Moffatt's accomplishment stands, in this regard, without a rival.

A primary problem of any translator is the finality of the text on which he works Moffatt made free to modify the Massoretic readings in accord with his best judgment as to their original form Although neither in the King James nor the Revised Version had the traditional text been slavishly followed (instead the translators had occasionally followed variants in the early versions), yet such changes were always made with notable conservatism But Moffatt states, "The traditional or 'Massoretic' text is often desperately corrupt" It is sometimes "broken or defective" though the English versions do not reveal it And so he has made bold to correct errors in the Hebrew which he considered plainly evident In this he consulted, obviously, the ancient versions as well as requirements of Oriental idioms and literary common sense. His policy has occasionally led to a transfer of phrases, of verses and sometimes of entire sections Whatever justification this course may have as exposition of the Bible, it cannot but be considered to exceed the proper function of a translator, which is to render faithfully and worthily the text as attested by the best ancient authorities

The translation is pre-eminently original Moffatt himself says that it "is a fresh translation of the original, not a revision of any English version" Its language may be described, not unjustly, as modern colloquial British English. The poetry he has printed in verse form, a doubtful feature is the occasional use of rhyme (e g., II Sam 23.1). For "Jehovah" of the American Standard Version he has followed the French in using "The Eternal." By a system of italics and brackets he attempts to disentangle the alleged sources of the J and E narratives in the Pentateuch There are no subject headings. Chapter and verse numbers are all on the margins Moffatt had an acute feeling for the power of English words and the beauties of English style. Not infrequently his phrases are of an impressive appeal and his insights brilliant. Nonetheless, it must be admitted that too often his rendering is paraphrase rather than translation

In 1926 Moffatt completed his work by publishing his Old and New Testament translations in a single volume. The Moffatt Bible is a distinctive and conspicuous contribution to modern-speech translations. It is Moffatt's running commentary on the whole Bible.

The *Riverside New Testament* by W. G Ballantine was published in Boston in 1923 It was "made directly from the original Greek, Nestle's text (of 1901) being generally followed" In the English phrasing, the translator says, he made use of modern-speech translations, as well as of the Revised and the Authorized versions. He sought to reproduce as nearly as possible in English the exact sense of the original Greek The book is printed like any other book, the number of the chapters, but not of the verses, being indicated. There are no subject headings at all. Quotations from the Old Testament are printed in the same type as the rest of the page but are enclosed in quotation marks There are no references or footnotes A clean beautiful page attracts the reader. A revised edition was published in 1934.

Goodspeed's New Testament is the work of Professor Edgar J. Goodspeed of the University of Chicago. It is based on Westcott and Hort's text and was published in Chicago in 1923. Its language is a distinctly American English, in contrast with the modern-speech translations of Weymouth, the Twentieth Century, and Moffatt, which are in the English of Great Britain. Excepting a special pocket form of the first edition, chapter and verse numbers were printed at the bottom of the page. Otherwise and in most later editions they were placed on the margins Subject captions are not given, and quotations are enclosed in proper marks. The solemn "thou," "thee," and "thy" are not used even in prayers The book is printed like any other book, and in the language of the common man. Among modern-speech translations of the New Testament this work has no peer.

The Centenary Translation of the New Testament was made by Mrs. Helen Barrett Montgomery of Rochester, New York, who thus attained the distinction of being the only woman to produce a modern-speech translation of the New Testament. It was published in Philadelphia in 1924, in two 12mo volumes, with an approximate total of 724 pages Its publication celebrated the close of the first hundred years of service of the American Baptist Publication Society. Each book of the New Testament is introduced by about a half-page of introduction, which gives date, author, key verse, characteristics, symbol, method, and the like Modern-speech translations minimize the breaks of chapter and verse divisions, but Mrs. Montgomery emphasizes chapters by assigning to each a title, which is printed in capital letters.

In addition she breaks up the chapters into paragraphs, each carrying a theme printed in dark-faced type. This policy offers wide scope to the author's ingenuity, as seen in these colloquial topics: "A 'Close-up' of Sin" (p 401), "Paul's Swan Song" (p. 578); "Orchestrate Your Virtues" (p 647). Direct discourse is put in quotation marks. Quotations from the Old Testament are printed in italics. The sources of these, and a few textual notes, are found at the bottom of the pages.

An interest in the bearing which a knowledge of Semitic backgrounds may have upon the understanding and the translation of the New Testament has led also to some versions which have sought to exploit these resources In 1933 two such translations appeared, a New Testament translated by George Lamsa and *The Four Gospels—A New Translation* by Professor Charles C Torrey of Yale University The former was nothing more than a rendering of the late (Peshitta) Syriac, itself a translation of the Greek The latter sought to reconstruct and translate hypothetical Semitic documents of which supposedly the Greek Gospels were translations. While Torrey's work, along with similar but less comprehensive efforts by scholars such as Dalman, Montgomery, Burney, and Burrows, has thrown valuable light, in places, upon the Greek text, New Testament scholarship in general hesitates to accept the view that our present documents are translations The possibility of Semitic sources back of our Gospels is not excluded; yet it is felt that the linguistic phenomena can be explained by the supposition of translation during a period of oral transmission of the material in Aramaic and Greek, or by the native idiom of the authors and editors of the Greek documents, or by the influence of the style of the Greek Old Testament. In addition, the historical situation reflected by the contents of the Gospels, as well as their use of already extant Greek documentary sources, would seem to render the hypothesis untenable.

The Old Testament, an American Translation appeared in Chicago in 1927. It was the joint work of Alexander R. Gordon of Montreal, Theophile J Meek of Toronto, Leroy Waterman of Ann Arbor, Michigan, and J M Powis Smith, who was editor of the whole volume Gordon translated Proverbs, Isaiah, Jeremiah, Ezekiel, and Daniel, Meek rendered the Pentateuch, Joshua, Judges, Ruth, Song of Songs, and Lamentations, Waterman's work was Samuel, Kings,

Chronicles, Ezra, Nehemiah, and Esther, Smith's translations were Job, Psalms, Ecclesiastes, and the minor prophets. The translation seemed to be required by "the great advance in Hebrew scholarship within the past forty years, resulting in a better knowledge of Hebrew, a fuller understanding of the fundamental textual problems involved and a clearer recognition of poetic structure" (Preface).

The Massoretic text was the basis of the translations, but with such textual changes as the evidence of the versions or critical conjecture seemed to justify The extent to which such changes were adopted is indicated by the immense bulk of the notes in which they are listed; they constitute an Appendix of ninety-one small-type, closely printed pages. Such free treatment of the text, in particular the large use of conjectural emendation, is a feature in which this translation has gone beyond all others But otherwise, the actual phrasing deviates less from the King James Version than, for example, Moffatt's version. A commendable feature is that the divine name is rendered the LORD, not "Jehovah" as in the American Standard. The page exhibits good typography, is well spaced and paragraphed Subject headings, printed in capital letters, are inserted where the text seems to require them. Poetry is printed in verse form "Thee," "thou," "thy," and the archaic verb forms are used only in addressing the Deity.

In 1931 the Smith Old Testament and the Goodspeed New Testament were published together as *The Bible—An American Translation*. A few changes were made in the former separate volumes. In the Old Testament the Appendix of textual notes was dropped out. In the New Testament both chapter and verse numbers were transferred to the margins. Also, running heads give "New Testament" on the left-hand page and the name of the book on the right-hand page. There were no subject captions either over the chapters or in the text, and no footnotes. But the volume was still paged as two separate books, with 1,619 pages in the Old Testament and 418 in the New. With minor changes the translations remained as when issued in two separate volumes. The Old Testament translation was given a hurried revision by Professor Meek in 1935. An exhaustive revision was initiated in 1950, together with a project of annotating both Testaments.

A selection of passages from this translation was issued in 1933 in

a volume of only 545 pages, entitled *The Short Bible—An American Translation*. J. M. P. Smith had died, September 26, 1932, and the editing of the entire work was carried through by Edgar J. Goodspeed. In a selection so restricted it is apparent that less important books were of necessity passed over, and thus, of the Old Testament, Chronicles, Song of Songs, Lamentations, Obadiah, and Malachi are completely missing, as likewise II Peter, II and III John, and Jude from the New Testament The books are arranged in chronological order The Old Testament selections begin with Amos and end with Ecclesiastes; those from the New open with Thessalonians and close with Titus A valuable feature is the brief introduction, of one-half to two pages, printed in italics, which the editor has prefixed to each book. Another novel element is the inclusion of a fragment from Ecclesiasticus, only verses 1-15 of Chapter 44, which follows the selections from Ecclesiastes This action was in a sense a promise on the part of Professor Goodspeed, for through the following years he made a completely new translation of the entire Apocrypha, which then was published, also by the University of Chicago Press, in 1938 And then this course of translation and publication reached its logical culmination in the appearance in 1939 of *The Complete Bible· An American Translation*; it was "complete" in that it contained, as already mentioned, the Apocrypha as well as the Old and New Testaments.

Roman Catholic scholarship has not remained negligent of the need for an acceptable English translation of the Bible The Rheims-Douai Version was subjected to notable revision in the eighteenth century by Bishop Challoner of London and Archbishop Troy of Dublin This and subsequent work was so far-reaching that it has been at times remarked with exaggeration that scarcely a word of the original translation remains Yet all this has been surpassed by the activity of recent years among Catholic scholars in translation of the Bible, a stirring comparable to that among Protestant translators which we have been surveying. An early expression of this activity was the work on *The Westminster Version of the Sacred Scriptures*, which began to appear in 1913 However, publication was slow, but then a "small edition" was published in 1948. The latter is a volume of 479 pages, printed in modern paragraphing, with verse and chapter numbers removed to the outer margin, but having numerous divisional and sectional head-

ings interspersed in the text. The pages carry no titles except those of the successive books; at the foot of the pages is a series of explanatory and doctrinal notes. Much more striking, however, is the fact that the translation is made from the original Greek. The editors state that their "first aim" was to "stimulate the study of the Scriptures, first by providing as faithful a rendering as possible from the best available Greek text, and then by presenting it with all the aids to intelligibility and readability which a rational typographical arrangement, plentiful notes and the removal of all arbitrary interruptions of the sense could supply." The Old Testament is now nearly complete.

Another important version was that published in 1941 by St. Anthony's Guild Press, of Paterson, New Jersey, bearing the title, *The New Testament of Our Lord and Savior Jesus Christ Translated from the Latin Vulgate, a Revision of the Challoner-Rheims Version Edited by Catholic Scholars Under the Patronage of The Episcopal Committee of the Confraternity of Christian Doctrine.* It is a volume of 762 pages, equipped with maps, glossary, and numerous footnotes. Of these latter, one series consists merely of parallel references, but the other is in a broad way explanatory. Textual features come in for not-infrequent comment, including divergences from the original Greek. Many of the explanations are doctrinal Peter's confession (Matt. 16:16-19), for example, gives occasion for a half-page discussion which asserts, *inter alia*, that "the rock was Peter" In addition each book is prefaced with an introduction, of one-half to one and one-half pages, where again the official Roman position is set forth. The text is printed in a single column to the page; paragraphing is frequent; poetic passages are set in appropriate form. The format is attractive; the excellence of the translation, though based on the Vulgate, approximates the quality of versions made direct from the Greek

Yet this did not exhaust the industry of Catholic translators It was to be expected that they would push on to a version of the Old Testament as well But the actuality merits remark, for the Old Testament is being translated direct from the Hebrew and Aramaic originals "by Catholic Biblical scholars under the patronage of the Bishops of the U.S." The Book of Genesis was published in 1948, then later included in volume one of the Old Testament in 1952. Also Fathers Kleist and Lilly in 1954 published *The New Testament Rendered from the*

Original Greek, with explanatory notes, a volume of 688 pages inspired by the wish "to render the Greek into such modern English as . . . would approve itself to American Catholics." These signalize developments in Catholic Biblical scholarship unrivaled since Jerome.

About the time when the "Confraternity" version was being produced, a similar undertaking was in process among the Roman Catholics of England and Wales. In 1944 there appeared *The New Testament of Our Lord and Saviour Jesus Christ newly translated from the Vulgate Latin at the Request of Their Lordships, the Archbishops and Bishops of England and Wales.* It was the work of Ronald Knox, who explains in his Preface that the hierarchical request was made in 1939. Like its American counterpart, the version abandons verse divisions in favor of paragraphing, relegates verse numbers to the margin, and prints one column to the page. Glossary and introductions are omitted; footnotes are much less frequent and, in general, less doctrinal. But this must not be attributed to superior principles, for the note on Matthew 1 25, for example, attempts to defend the dogma of the perpetual virginity of Mary, and that on Mark 8 27-39 claims that omission of "the promise to Peter" was perhaps due to his humility! Another similarity to the Confraternity version is the retention of archaic pronouns and verbal forms.

Father Knox continued his labors. His translation of the Book of Psalms was published in 1947 It is a modest little volume of 239 pages, with no preface or introduction, and bears the simple title, *The Psalms, a New Translation, by Ronald Knox* In addition to the canonical Psalms it contains sixteen "canticles from the Song of Moses to that of Simeon" The jacket flap tells that the translation was made from "the new Latin version of the Psalms, with reference to the Hebrew." Poetic form is ignored; there are no page headings, and no titles other than the ancient Psalm introductions The entire task progressed rapidly, the first volume of the complete Old Testament translation, containing the books Genesis to Esther, came on the market late in 1948, and the second and concluding one in 1950.

A very important translation project was initiated in Great Britain in the summer of 1947. After some preliminary conferences, a joint interdenominational committee was set up by the Church of England, the Church of Scotland, and the Free Churches of Great Britain, with

representation from Ireland and Wales, to undertake a new translation of the entire Bible, including the Apocrypha, "into modern English" Subsequently representatives of the British and Foreign Bible Society and of the National Bible Society of Scotland were added. Meeting in the historic Jerusalem Chamber in Wesminster Abbey in January, 1948, the committee organized into four panels, one each for the Old Testament, the New Testament, and the Apocrypha, and a panel of literary advisers. The late Bishop of Truro was originally chairman of the Joint Committee, with Reverend G. S. Hendry as secretary. These have now been succeeded by C. H. Dodd and J. K. S. Reid respectively. In harmony with British usage, publication has been entrusted to the University Presses of Oxford and Cambridge.

Yet all this impressive activity, serving to make the present the most remarkable age of English Bible translation, does not exhaust the subject. Mention must also be made of *The Bible in Basic English,* 1950, prepared in England by a committee under the direction of Professor S. H. Hooke, which accomplished the astonishing task of presenting the Bible in acceptable form with a total vocabulary of nine hundred words. E. V. Rieu published *The Four Gospels* in 1953; as a "Penguin" book it is of more than passing interest. *The New Testament Letters, prefaced and paraphrased* by J. W. C. Wand, appeared in Australia in 1944. In the following year Gerrit Verkuyl published his *Berkeley Version of the New Testament from the Original Greek, with brief footnotes.* His aim was to escape Biblical English and render the scriptures in the idiom of today. Similar was the purpose of J. B. Phillips' *The Gospels translated into Modern English,* 1952; and *Letters to Young Churches, a translation of the New Testament Epistles,* 1947. Comparable is *The New Testament in the Language of the People* by Charles B Williams (copyright 1936); yet his straining after accurate representation of Greek inflection reveals a failure to appreciate the rich resources of the English tenses. *The New World Translation,* 1950, 1953, carried this mood farther, awkwardly rendering the Hebrew "waw conversive" by "proceeded to."

CHAPTER XXV

The Revised Standard Version

THE defects of the American Standard Version became increasingly apparent with the passage of the years. The King James Version, notwithstanding the worthy scholarship that had gone into its making and the resonant majesty of its wording, was quite out of date. The modern-speech translations, with all their excellence, stood apart from the great tradition which had flowed on from Tyndale and Coverdale and the great versions of the sixteenth century Thus it came about that the English-speaking world found itself devoid of a Bible translation that could without reserve be set forward as *the* English Bible. And so, when in 1929 Thomas Nelson and Sons offered their expiring copyright on the American Standard Version to the International Council of Religious Education, one of the great unitive movements of American Protestantism, it was accepted promptly. Renewal of copyright was secured on April 3, in that year, and proceedings were at once set in motion for a revision. The American Standard Bible Committee was constituted; it was to be composed of leading Biblical scholars of the country, instructed to consider the advisability of revision, and to make recommendations as to its character and basic principles in case their decision should be affirmative. It was hoped that then the revision could be completed by 1941

In February, 1930, the composition of the committee was announced It consisted of thirteen members William P Armstrong, Princeton Theological Seminary, H. J. Cadbury, Bryn Mawr College; F. C. Eiselen, Garrett Biblical Institute; E J Goodspeed, University of Chicago; A R Gordon, United Theological College; James Moffatt, Union Theological Seminary; J. A. Montgomery, Philadelphia Divinity School; A. T Robertson, Southern Baptist Theological Seminary; J. H Ropes, Harvard University, John R Sampey, Southern Baptist

Theological Seminary; Andrew Sledd, Emory University; C C. Torrey, Yale University; and Luther A. Weigle, Yale University.

On April 15 the committee convened in New York City for organization and planning of its work. Dean Weigle was made chairman, a post he has subsequently held without interruption throughout the entire history of the committee. It was a happy choice, since apart from his high qualifications for leadership of a scholarly venture, his recognized place in the International Council provided at once a ready means of communication and understanding with that body. W. P. Armstrong was elected vice-chairman, and Hugh S Magill of the International Council, secretary. Old and New Testament sections were also organized. Of the former John R. Sampey became chairman and F C. Eiselen secretary, in the New Testament section the officers were J H. Ropes and H J. Cadbury

The fundamental issue was debated long and earnestly; for vigorous opinion was expressed that the King James Version was still adequate and any change from it would be a mistake Only after two years of wrestle with this and consequent problems did the committee reach a near unanimity in favor of revision. It is obvious that important questions would arise also in these discussions about the general character of the revision, if undertaken, and about many details of procedure. What should be the position relative to the King James, on one side, and to the modern-speech translations, on the other? How should the committee render the divine name in the Old Testament which the American Standard had called Jehovah and Moffatt had given as The Eternal? What about the archaic forms of pronouns and verbs which contribute to the King James not a little of its distinctive flavor? Seemingly less acute were questions as to continuance of older forms such as "whosoever," "lest haply," "if perchance," "was come," and the like Had the English subjunctive been so far sloughed off that it might be ignored in good usage? Should "the children of Israel" continue to give the impression that the wanderings in the Wilderness were a sort of ancient prototype of the Babes in the Wood? The minutes of the early meetings of the Committee contain records of extended discussions of such problems.

A second meeting was held in New York City in 1930, and two more in 1931, and then another January 21-23, 1932 With that the work

lapsed. The country was then in the depths of the great financial depression, and money could not be found to proceed. In the meantime the death of Professor Gordon had occurred March 5, 1931; his place was taken by W. R Taylor of the University of Toronto The committee was enlarged also by the addition of J A Bewer of Union Theological Seminary, and J. M. P. Smith of the University of Chicago Considerable progress was made on actual revision At the meeting in the Prince George Hotel in New York in September of 1931 an evening's session was devoted to the reading of extended passages from the Book of Genesis and the Gospel of Matthew The solid impressiveness of the results remained long in the memory of those present Plans were also completed for the revision of the rest of Matthew, and of Genesis and all of Exodus, by the designation of different sections to various members of the committee working in pairs Much of this revision had not, however, been passed through the committee by the time it was obliged to discontinue its work.

Notwithstanding the prevailing financial stringency, efforts were put forth through the following years to secure funds with which to resume the task. But it was not until 1936 that the skies had so far cleared for American business that Dr. Roy G Ross, General Secretary of the International Council, was able to negotiate an agreement for the advance of working capital against prospective royalties Perhaps it should be explained that the money was needed for obvious expenses, which through the years required for the revision would total a considerable sum But these expenses never included stipends or honoraria for the members of the committee They have been reimbursed for their expenses, notably for travel to the place of meeting, but apart from the executive secretary, whose duties make a major demand on his working time, no member of the committee has ever expected or received payment for his work. The immense toil required has been given without stint, the one reward being participation in an undertaking of such importance.

On the basis of Dr Ross's success, the International Council at its meeting in February, 1937, took up once more its consideration of the revision, and action was formalized in a motion which has become a sort of charter of the entire project. The Council decided:

That we record the conviction that there is need for a version which embodies the best results of modern scholarship as to the meaning of the Scriptures, and expresses this meaning in English diction which is designed for use in public and private worship and preserves those qualities which have given to the King James a supreme place in English literature We, therefore, define the task of the American Standard Bible Committee to be that of revision of the present American Standard Edition of the Bible in the light of the results of modern scholarship, this revision to be designed for use in public and private worship, and to be in the direction of the simple, classic English style of the King James Version.

Further action related to the composition of the committee; it was to "be understood that not less than three and not more than five of the fifteen members of the Committee be chosen with a view to their competence in English literature, or their experience in the conduct of public worship or in religious education." The others were to be chosen "for their competence in Biblical scholarship"

In the intervening years death had taken other members of the original Committee Professor Smith died in 1932, Professor Ropes in 1933, Professor Robertson in 1934, and Professor Eiselen in May of 1937 Then too, Professors Montgomery and Torrey, Armstrong and Sledd requested to be relieved of a task which was expected to continue through five to seven years. Through the summer of 1937 the committee canvassed names of scholars to fill these vacancies Invitations were extended to, and presently accepted by, George Dahl of Yale University, Frederick C. Grant of Seabury Western Theological Seminary (later of Union Theological Seminary), W A. Irwin of the University of Chicago, and Leroy Waterman of the University of Michigan. Professor James Moffatt was appointed executive secretary, to assume his duties in the summer of 1938, after his retirement from the faculty of Union Theological Seminary

To implement the resolution of the International Council relative to men competent in English style and experienced in public and private worship there were appointed Reverend W R Bowie, Rector of Grace Church, New York (later Professor in Union Theological Seminary), and Dean W L. Sperry of Harvard Divinity School, along with Dean Weigle these made up the required total of three The committee was still incomplete when it convened in December, but shortly afterwards C. T. Craig of Oberlin (later of Yale) and Millar Burrows of Yale became members. After the first meeting

President Sampey found it inexpedient to continue, and Kyle Yates of Southern Baptist Seminary took his place In 1939 A. R. Wentz of the Lutheran Theological Seminary, Gettysburg, was appointed, and in 1945 W. F. Albright of Johns Hopkins University, J. P. Hyatt of Vanderbilt University, H. G. May of Oberlin Graduate School of Theology, James Muilenburg of Union Theological Seminary, and Harry Orlinsky of the Jewish Institute of Religion. A severe loss was sustained in the death of Professor Moffat on June 27, 1944. His gracious qualities had endeared him to all his colleagues through the intimacy of detailed committee discussion across six years; his rare facility in English style had been a rich resource and guide when, as commonly, the problem turned upon the best phrasing of a meaning upon which agreement had been reached. A large part of the secretarial work for the New Testament version had been completed by the time of his passing, but responsibility in the heavy tasks incident to seeing the volume through the press fell primarily upon Dean Weigle The office of executive secretary remained vacant for more than two years. Then early in 1947 Fleming James, dean emeritus of the School of Theology, the University of the South, Sewanee, Tennessee, accepted its responsibilities.

The committee, reconstituted and revived, convened for its first meeting of this second period of activity in the Directors' Room of Union Theological Seminary at 9 A M, December 3, 1937 With portraits of notable figures from the history of Union Seminary looking down upon it and with memories of Edward Robinson, Francis Brown, and C. A Briggs still vital, it was an impressive atmosphere in which to set about a task of such far-reaching promise for the place of the Bible in the modern world The meeting, which continued through three sessions on that day and two on the next, was obviously concerned primarily with the reorganization and planning of its work, although one session was actually given to corporate work on sample passages in separate Old and New Testament sections.

Once again general matters of procedure came up for serious consideration. It was agreed that the task was one of revision of the American Standard Version in the light of the King James; the objective was not a new translation In other words, the new version should stand in the direct course of the great English Bibles which

reach back by direct dependence to Tyndale and Coverdale. Changes from the American Standard were to be made only for good and sufficient reason. They should be decided by majority vote as the work proceeded in each of the Old and New Testament sections into which the committee would obviously divide itself; in case of a tie the older reading must remain. But final action on any and all changes must be on the basis of a two-thirds vote. Authoritative original texts to be employed were the consonantal Hebrew text of the Old Testament (or Aramaic in the case of the well-known Aramaic sections) and Westcott and Hort's Greek text of the New Testament It was laid down as a guiding principle that textual emendation on the basis of the ancient versions was admissible, but conjectural emendation might be practiced only very rarely and with great caution.

Lengthy debate was given to certain matters of English style In particular the problem of the retention or disuse of archaic pronominal and verbal forms consumed much time It was finally agreed, although not without dissent, that the older forms should be reserved for passages of divine utterance or of address to God. Later the usage was narrowed to the latter class There was, however, no uncertainty as to the treatment of the divine name in the Old Testament, the committee agreed immediately and unanimously to "return unto the Lord"! It abandoned the novelty introduced by the American Standard Version in its use of the name "Jehovah" and reverted to the dignified title hallowed by centuries of devout use. To distinguish the Old Testament "Lord" from the title for Christ in the New Testament the former was to be printed in small capitals, as also the word God when it stood for the divine name in the original. Many other matters were discussed paragraphing, the form of poetic passages, the use of quotation marks, and the like Also a long list of minor details worked out by the committee in its first period of activity was endorsed and adopted as comprising rules of procedure.

Then setting itself to the labors that were to engross it through many years, the committee allotted groups of chapters to its several members for revision. While recognizing fully the accomplishment of its earlier activity, the committee considered it expedient for the Old Testament section to begin once more with Genesis, Chapter 1, and the New Testament section with the opening of Matthew's

Gospel, each section then in its work to make such use of the former results as it should see fit. As a method of procedure, the sections were further subdivided into pairs, three in each of Old and New Testament The intention was that in each case these two men should exchange and criticize and reconsider their revisions before sending them on to other members in agreed rotation These in turn were to send detailed comments back to the original reviser. By this method of double reconsideration it was hoped that relative finality could be attained before the assembling of the committee In course of time this refined scheme fell into disuse; it was found most expeditious for each reviser, after seeking such assistance as he desired, to have his individual results mimeographed and circulated among his colleagues; but it remained the duty of these to study the revision in detail, send their notes to the reviser, and come to the meetings of the committee prepared to discuss in detail the passages under consideration.

At this organization meeting the Old Testament section allotted to each of its members a block of fifteen chapters—for the six of them, then, ninety chapters, which by coincidence was the total of the Books of Genesis and Exodus It was a brave beginning, and offered high promise of an expeditious consummation of the entire task. But a cold awakening was in store. The section reconvened, in its first working meeting, at the University of Michigan in July, 1938. It worked eight hours a day from July 11 to 15 in the relatively easy narrative chapters of Genesis and Exodus, and covered approximately twenty-seven chapters! A similar result emerged from the meeting the following December, held at the Divinity School, Yale University; through the days 27-31 inclusive, again, as by coincidence, the total was twenty-seven chapters, although on this occasion much of the subject matter was in the legal sections.

The perplexing fact became clear that the meetings were the bottleneck of the committee's accomplishment It was relatively easy to secure large blocks of individual revision, but the differences revealed among the members when they came together resulted in lengthy debate and slow progress Various expedients were adopted to overcome this delay An effective one was the holding of sectional meetings to treat assigned bodies of text. The Book of Ezra was thus done by the men on the Atlantic coast, and Daniel by those in the Middle

West; when these were subsequently reviewed by the full membership of the section, final action consumed relatively brief time. However, the most consistent and effective device has been merely the efficient conduct of the meetings under constant effort to hold the discussions rigidly to the matter in hand and, while avoiding any limitation of effective debate, yet to seek to determine argument as soon as possible and bring the matter to a vote. When this policy had been efficiently administered, the committee came to recognize that, however slow progress might be, no other course was practicable in the interests of the revision but to take the time necessary for adequate consideration of every contribution that each member could make toward an understanding and proper translation of the Biblical text.

The New Testament section met for two weeks in June, 1938, and again in the summer of 1939, as guests of Professor and Mrs. Goodspeed at their summer home in Wisconsin. But subsequent meetings of both sections were held in the East, a few in Northfield, Massachusetts, but more in New York or New Haven. Frequently the Old Testament section worked through Christmas week in Union Theological Seminary and convened in June or early July in the Divinity School of Yale University for its summer meeting. But this oscillation never attained the fixity of a rule; in the better sense of the word, the program was opportunist. As the work advanced, the New Testament section hastened its progress with more frequent meetings, and presently the Old Testament section did likewise

The procedure of the meetings became a routine dictated by the character of their work. The members of the Old or New Testament section, as the case might be, chose seats around a long central table at one end of which the presiding officer, normally Dean Weigle, took his place. On other tables close at hand were accumulated a mass of commentaries, dictionaries, and other relevant material The central table had a number of copies of Biblical translations, ancient and modern, in addition to the materials which the individual members brought. The meeting opened with prayer Commonly a few minutes were consumed with business; and then the work of the meeting began The Biblical passages to be considered were already known, commonly the agendum was agreed upon at the previous meeting. And so, with his copy of the revision to be studied lying

open before each member, and his ancient texts close at hand, discussion began, verse by verse, or indeed phrase by phrase. There were few verses of the revision that did not provoke question In some cases it was felt that the proposed rendering was unnecessarily drastic in its departure from the American Standard, which it will be recalled was the basic text of the revision Not infrequently decision reverted to the wording of the King James Version No matter was too trifling for attention. On occasion there was lengthy debate over a preposition; sometimes even a comma provoked discussion. In some cases proposals carried with little comment; at other times a seemingly innocent passage uncovered a wide divergence of opinion. Argument frequently became earnest, sometimes heated; but it was recognized that there was no place for personal recriminations. Members who had opposed one another with intensity on the meaning of a Hebrew phrase or its most accurate and graceful rendering in English would be found, a few moments later, when the session had terminated, walking together in cordial conversation that manifested their genuine friendship. Cliques and partyism were non-existent. True, some of the men had been personal friends for years; also the course of the work revealed unexpected affinities of point of view. Yet the issues as they arose were faced on their merits as each member saw them. In a given proposal no one knew in advance who would support or oppose him. Old friends found themselves frequently arguing in strenuous opposition. In the voting new alignments were constantly appearing; the men who had stood together on this issue split asunder on that. The totals of votes showed a similar vacillation: all the way from unanimity—which was rare—to a minority of one, which often emerged. Of course that individual might comfort himself with the thought that one man *with God* was a majority But the others had a contrary view of God's vote in the matter!

The sessions were long and tiring The regular schedule was of eight or nine hours a day After sitting through such days, constantly on the alert to follow or participate in the discussion, and this sometimes in the intense heat of midsummer for one or even two weeks, it is little wonder that most participants in the meetings came to find that they required some days of relative rest to recover normal vigor. However, the tedium was lightened with considerable good-natured

banter—does a group of men, however serious their purpose, ever work together for long without finding some fun in their comradeship? Perhaps this suggests an answer to the question laughingly raised on one occasion, whether King James's translators had so much fun.

It was inevitable that the work on the New Testament should be completed first When the members of this section had carried their revision through committee discussion, they began at the beginning once more and went through it all again The advantage, indeed the necessity, of this course will be apparent The next step was to distribute mimeographed copies of their results to the members of the Old Testament section for study, criticism, and final approval or dissent. When these reports had been received, the New Testament scholars gave a final meeting to consideration of results. Through August 15-29, 1943, in Northfield, Massachusetts, the entire New Testament was thus reviewed The votes of the Old Testament scholars were counted along with those of the New Testament section, and by this process the opinions of the entire committee were registered. Only by a two-thirds majority of the entire committee was any revised reading finally adopted. This concluding meeting of the New Testament section was its thirty-first; in total it had spent 145 days in session. There remained still the details of editing the manuscript for publication and of overseeing its progress through the press. This responsibility was committed to a selected smaller group from the committee.

On February 11, 1946, the *Revised Standard Version of the New Testament* was published Bound in blue cloth, and issued in a jacket that boldly announced "the most important publication of 1946," the volume was a credit to the printer's art and one of the most satisfying editions of Scripture to have appeared The type was clear and attractive, the text was presented in full-page format, and the volume's 553 pages imparted to the reader a sense of ease and breadth. On each page the name of the New Testament book and the chapter number were printed at the outside of the top margin, and a factual heading descriptive of the subject matter stood at the corresponding inside corner Page numbers were set in the center of the lower margin Chapter numbers were indented, verse numbers were large at the beginning

of a section, but elsewhere were in small, inconspicuous figures at the beginnings of successive verses At the foot of the page there were commonly two series of notes The first, in small print, gave literal meanings, variant readings, or, quite rarely, brief explanations; the second cited parallel passages, with blackface type for the original passage and lighter type for the parallels Only four pages were given to a Preface, since the large number of introductory matters relevant to the version were dealt with in a paper-bound brochure, ***Introduction to the Revised Standard Version***, consisting of essays by the members of the New Testament section.

The publication was celebrated in a service of thanksgiving and dedication conducted by the International Council of Religious Education, then in session in Columbus, Ohio What could have been more fitting for the occasion than the singing of "How Firm a Foundation," as the processional hymn, and as recessional "O Word of God Incarnate"? For the Scripture lesson, Hebrews 11:1-3 was read by chosen representatives in the original Greek, then in the Latin, the Tyndale, the King James, the American Standard, and the Revised Standard versions Dean Weigle delivered the address on "The Bible and Religious Education," in the course of which he outlined the initiation of the new revision, traced its history and its relationship to previous English Bibles, and gave a sampling of its readings. Symbolizing the actual publication, copies were formally presented to the International Council, to its president, and to five other representative persons.

A few days later, in the course of its annual meeting, the International Council adopted a resolution expressing "To the members of the Standard Bible Committee its deep appreciation for the monumental work . . . already accomplished through their preparation of the Revised Standard Version of the New Testament and for the work already done on the Old Testament. . . ." It expressed too its belief "that this version is a worthy successor to the works of earlier translators which served well their own days, . . " and that it would "be an effective instrument in making known God's will for men through Jesus Christ." The resolution voiced deep regret that Dr. Moffatt had not survived to see this "proud moment," and concluded with the devout prayer that the translation might "lead many to

serious New Testament study and to fuller fellowship with Him of whom its pages speak."

It was not expected that the publication would be greeted with such tumultuous welcome as had been accorded the Revised Version of 1881 Nonetheless, interest was deep and widespread. Available supplies quickly sold out; not for several months could the printers overtake the demand. A year after the original publication the International Council, at its meeting, presented the millionth copy of the edition to Reverend Martin Niemoller, then on a visit to the American churches. The steady demand was indicative of general satisfaction. More and more, as time went on, expressions of approval were heard from individual readers, from teachers in colleges or seminaries, and from leaders in religious work who found that in the test of actual use in a variety of circumstances it was proving a source of enlightenment. Formal reviews were in general favorable; one or two were of the "freak" type that evidenced more the reviewer's ignorance than any deficiency in the translation Biblical scholars read papers on the version at their meetings which, while finding much to call in question—as was inevitable, for no translation can ever be perfect—yet conceded a general, if cautious, approval.

Work on the Old Testament continued. In its session in the summer of 1949 the committee reached the end. all had been revised. Then, just as was done in the case of the New Testament, it started once more at the beginning and went through it all again. This was necessary, and was eagerly undertaken; for much of the work lay ten years in the past, years that had been very fruitful in clarification of the character and methods of the revision. Comments and criticisms were sought and gratefully received from a wide representation of the life of the church; individuals on their own initiative contributed suggestions, all of which were accepted seriously and debated, the New Testament members took up their responsibility and submitted their views in lengthy series of notes. On these documents, as well as the detailed written comments of the Old Testament group, the committee worked for two years. At length in June, 1951, just short of thirteen years after its first meeting in working session, the task was finished It had been a time of high scholarly adventure, of rich and rewarding comradeship, of toil, not infrequently arduous, but sustained by faith and hope for the worth

of the common endeavor. There had come moments of sadness also; for in addition to the losses already recorded, the committee had been shocked by news of the sudden death on February 24, 1951, of Principal W. R. Taylor of University College, Toronto His participation in the work had been second to none. Most of all he will be remembered for his revision of the Psalms. Fortunately, the committee's second study of his rendering was almost complete when he went from us, so that he saw the translation in practically the form in which it was later published.

An editorial group appointed from the committee had yet a year's work before it; copy began to go to the printers in April, 1951; but August had come and run its full course when at last they completed their tedious and meticulous care of minor details. There followed months of waiting, as it seemed, but in reality months of intense activity on the part of the publishers. Thomas Nelson & Sons, who had recognized the importance of the undertaking when it was as yet little more than a pious hope, and had given it generously of their moral and tangible support, now took the bold course of preparing a first edition of a million copies. It is said to have been the largest single printing enterprise ever undertaken, and some interested themselves in calculating the physical bulk of so many volumes and the mass of paper and other commodities required. Work went forward concurrently in New York and Edinburgh, and publication was simultaneous in America and Britain. The edition was in two forms, a two-volume Old Testament uniform with the New Testament published in 1946, and a single volume containing both Old and New Testaments, of which eighty thousand copies were bound in leather. Both were beautiful examples of the printer's art, presenting a page that was clear and attractive. Prose was set in paragraphs, poetry in its original lines. Chapter numbers, in Roman numerals, were incorporated in the text by indentation of two lines; verse numbers were similarly included, though in small size where they occurred in the body of the paragraph. Captions of a strictly factual sort stood at the top of the page on its inner side, in the lower margin were textual notes and a limited number of cross references.

Long before completion of the revision, publication date was set for September 30, 1952 More than a year in advance plans were well afoot

for adequate recognition of an event to which most of the Protestant churches of this continent had given their approval, and in which they had participated in varying measure. A vigorous campaign of publicity was put in the hands of a prominent advertising firm. Popular magazines carried accounts of the revision and its place in the history of the English Bible. All headed up in a great series of religious meetings throughout the United States and Canada on the evening of publication day. Plans called for three thousand of them; actually there were 3418 Since programmes were prepared in the central offices, it is probable that the meetings were of uniform character. They were religious services, with singing, prayer, liturgy, and an address, then concluding most appropriately with the great hymn, "How Firm a Foundation" In the course of the meeting copies of the new version were presented to a few appropriate persons chosen from the community. Then at the conclusion, the version was on sale in the foyer of the building. And publication had come about.

The edition was quickly exhausted Within a few days stocks were sold out, and only with extreme difficulty could an urgent copy be secured. Never before, it is safe to say, were a million copies of a volume so quickly absorbed by the reading public. Yet interest was not abated. Communities which for one reason or another could not hold their celebration on the appointed day, followed as they might; so that in the end it was uncertain where the final total stood Notable among these was the seventh annual Festival of Faith of the Council of Churches of Greater Cincinnati on October 26, 1952 Eight members of the committee accepted the invitation to attend, the participation of press, radio, and television was enlisted, the Sunday services, with the guests assisting, gave prominence to the version. But the climax came in a great public gathering in the afternoon where more than fourteen thousand persons were in attendance. An appropriate religious service was conducted, then an impressive pageant of episodes of the history of the Bible was enacted in brief tableaux spotlighted in the immense auditorium, otherwise in complete darkness. As the culmination of the ceremony, Dean Weigle, chairman of the revisers and on their behalf, formally presented a copy of the version to the president of the Council of Churches, symbolic of the contribution which it was

hoped the translation might make to the ongoing life of the church.

As time went on, the version was subjected, just as the New Testament six years before, to examination by scholars. It was not expected that their reaction would be devoid of adverse comment, for no translation can ever be perfect. Yet as on the previous occasion, the major opinion was one of cordial, if qualified, endorsation. Not so, however, that of extreme, conservative religious groups. Almost coincident with the publication, they began to voice objections, which presently became vociferous. Central in their complaints was the baseless charge that the committee had intruded its theology into the translation; apparently the concern of such critics was not primarily with what the Bible says, but with having *their* theology written into it. Yet these also served an end far beyond their quibbles. The words of St. Paul were relevant: "Some indeed preach Christ from envy and rivalry, but others from good will. . . What then? Only that in every way, whether in pretence or in truth, Christ is proclaimed." It is doubtful that there was ever a time since the great impulse of Reformation days, when the Bible was, through whatever motivation, brought into such prominence with the general public. The occasion was a symbol of the deep stirrings of our time toward new apprehensions of the realities that are of the essence of the Biblical revelation, and was also, it is hoped, a promise of greater things to come.

Soon after the publication, members of the committee, friends, and Bible readers in general began sending suggestions for correction or reconsideration. Typographical errors were dealt with at once, but questions of translation were retained in a growing file for action by the committee. For the distinctive feature of this version is that it is in a constant process of revision that will take account of growing knowledge as well as of seasoned reconsideration Every worthy criticism, from whatever source, receives serious attention, for the committee desires only a translation of the Bible as near perfect as is possible. Unfortunately, the most vociferous objectors contributed nothing to this end, due not so much to their animosity as to their obvious unfamiliarity with the facts of the history of the Bible and the principles and problems of translation. For just as in the case of the King James, abuse that not infrequently sank to scurrility was heaped on the version and its

translators and auspices. Since all this will soon become small in the perspective of the years, it is of worth to record some of it for the encouragement of future Bible translators. For a time there were public burnings, in church services, of the version or of pages from it. It was called a "blasphemous unholy Bible," "an odious and contemptible crime," perpetrated by a "master strategy" using "fraudulent and underhand means" It was a "corrupted version, produced by religious infidels" from "centers of socialism and modernism." More ingenious was the juxtaposition, "The old Devil and his new Bible" Evidently much of this arose out of the presupposition that the King James was the original Bible; hence lists of divergences were published, commonly with a citation of Rev. 22:19. Slightly different was the affirmation, "The TEXTUS RECEPTUS, original Greek text . . . copies of it substantially exist today without corruption"!

Final appraisal must await the perspective that comes only with the slow lapse of the years. Opinions of scholars, however important, are not conclusive; oratory and polemic are of little worth; argument signifies nothing. The real test of the version's worth lies in its usefulness, day after day, for the varied hosts of Bible readers. The devout, simple soul who knows little of the meaning of Bible translation, the college or seminary teacher who looks for a source of illumination for his students, the religious worker in his private ministrations and his leadership of worship, the great multitude of those who love the Bible and grope for clearer understanding of its incomparable message: these are they who will say through the process of years whether or not the translators have served well their day and generation. That they have produced a version for centuries hence not one of them supposes or wishes; their one hope is that they may have contributed significantly toward a better realization in our time of the unrivaled beauty and greatness of the Bible.

Appendix

The Dead Sea Scrolls[1]

The scrolls merit more extended treatment than was possible within the logical balance of our chapter on the Hebrew Bible (Chap. I) Their story is one of scholarly uncertainty and keen debate over problems that seemed, as often happens in archaeological research, to grow more baffling with each new discovery Yet slowly the facts have fallen into place and large outlines of the situation have emerged, although there still remains matter for argument for years to come. The major issues have been three, though each of these is complex, in some cases with subsidiary questions that approximate primary importance. The three are, the age of the scrolls, their origin (that is, to whom they belonged and who put them in the caves, and under what circumstances), and their bearing on problems of the text of the Old Testament and on the history of their period.

Even before the existence of the scrolls had become generally known, their date was disputed. Mar Samuel, the Syrian archbishop, has related the skepticism he encountered in his stubborn confidence that his acquisitions were ancient and of high value. Similar was the belief of Professor Sukenik of the Hebrew University, who acquired for the university the remainder of this first group; he too was convinced that they were unique manuscripts from an ancient and little known Jewish sect. Professor John Trever, the first Western scholar to deal with the archbishop's scrolls, when he was satisfied that they were old, was driven to the obvious question, How old? He had recourse to the first edition of the present work, where, he recalled, a picture of the Nash papyrus stood as frontispiece (It is still one of the illustrations; see Fig. 2.) We have related above (page 30) that, when first published, this fragmentary page of Biblical Hebrew was assigned to the first or second century A D. However, a few years prior to the discovery of the scrolls, Professor Albright of Johns Hopkins had set forth his argument that it should actually be carried back to the second century B C. Trever's examination convinced him that the style of writing in the scrolls is comparable, hence they must be of a similar date He sent some photographs to Professor Albright, who fully endorsed this view. Before formal

[1] See pp 30-32

publication came about, vigorous criticism had been expressed, so that other considerations, of a sort to be mentioned in a moment, came under review. But it was largely on the basis of orthographic similarities that the scrolls were at length presented to the reading public as documents of the second century B.C.

But in reality we then knew very little about ancient Jewish styles of writing, and were in no position to determine the history of Jewish orthography. We had a few inscriptions of varying purpose on stone, commonly dated shortly before or soon after the beginning of the Christian era, there was an Aramaic mosaic from somewhat later, earlier than either were a few Aramaic documents from Egypt, though too early to be relevant to the current problem was the considerable group of Aramaic papyri from Elephantine of the fifth century, and there was the Nash papyrus But it is apparent that inscriptions on stone are dubious evidence for the development of the written hand. And how far was it justifiable to invoke Jewish writing from Egypt, that is, the Nash papyrus as well as the Aramaic documents, as determinative norms of Palestinian writing? Further the dating of the famed Nash papyrus was itself highly debatable. Presently a minute study of its orthographic features was made by Professor Lacheman and led him to reverse Albright's opinion; it ought to be attributed, he held, to about the end of the second century A D Notwithstanding much printer's ink and contradictory claims by different scholars, it became apparent that orthographic evidence was inconclusive, at the best, if we were limited to it, we could attain no more than some balance of probability, one way or the other

One of the most vigorous opponents of the prevailing view was Professor Zeitlin of Dropsie College, editor of *The Jewish Quarterly Review* In issue after issue of this journal he stoutly maintained that the ascribed dating was wrong; the scrolls were medieval, a claim which he explained as meaning that he was not concerned for the moment about an exact date; the important thing was that they were not pre-Christian and must not be invoked as in any sense valid evidence of that time Reminding his readers of the famous Shapiro forgeries of a couple of generations before, he even charged that the scrolls were "a hoax" No scholar had interviewed the Arabs who allegedly "found" them, none had even seen these men, much less examined the reputed cave, and anyhow there were notable inconsistencies in the stories of persons who had seen the scrolls in the archbishop's palace.

The hoax charge did not stand, especially when in course of time the cave was visited by competent archaeologists, and when other manuscripts began to appear in Jerusalem offered for sale by Bedouin But Zeitlin had effectively compelled broadening of the basis of investigation with other considerations which, it is true, had already been envisaged but had not

received the attention they deserved. The skepticism of British and European scholars also contributed to the growing urgency of a broader research.

Jewish scribes normally did not date their manuscripts. Here was the crux of the scholarly predicament Then it will be seen on a moment's consideration that in addition to the dubious quality of orthographic evidence, we were dependent on three lines of approach to the mystery, When in all the centuries are we to fix a group of Hebrew manuscripts that suddenly force themselves on our attention? These three are the archaeological context, if any, of the finds; the manuscripts as material objects; and finally their contents. All three are highly complex, as we must now show; and they ramify afar.

Archaeologists have refined their methods to an approximation of scientific precision in the dating of their materials In particular, the succeeding styles of pottery· its texture, shapes, manufacture, finish, and decoration, are known—to speak narrowly of our present concern—through four millennia. By associated potsherds—worthless rubbish as they seem from other points of view—the skilled archaeologist can tell, frequently within astonishingly narrow limits, the period of any ancient find. The results of investigation of this famous first cave, already mentioned, have never been disputed. Why should they? They were the considered opinion of competent archaeologists. But it is one thing to have a fact, it is a very different matter to tell what that fact means The predominantly Hellenistic pottery of the cave with slight Roman intrusion gave rise to long and keen debate. The apparently obvious inference was at once accepted by many scholars; the cave was used and presumably sealed in the Hasmonean period (143-63 B C), but was entered by some unidentified person or persons in Roman times Clearly the scrolls weree written and deposited in the cave some time before its ancient sealing, hence a second century B.C. dating for them seemed a cautious conclusion.

The apparent entrance of the cave in Roman times seized the imagination. The great church historian, Eusebius of Caesarea, was claimed to have related that Origen at some time during his work on the Haxapla (pages 74-78) had gone into a cave near Jericho and consulted manuscripts. Was this the very cave? Did he forget his lamp and leave it for us, by this means to come almost into arm's reach of him? It was a thought redolent of the romance with which archaeology is infused But, alas! the rosy dream dissipated. Examination of Eusebius shows that he said nothing of the sort, but only that Origen had used a manuscript which had been "in a pot." The vogue of this method of preservation of documents in a world that knew nothing of fireproof buildings and safe-deposit boxes is attested as far back as the sixth century (Jeremiah 32·14). The story lacks significance for our purpose.

While repudiating this connection, Professor Driver of Oxford drew

attention to an ancient account of how an Arab followed his dog into a cave somewhere near Jericho; there he saw "a small house" that contained many books. The matter was reported in Jerusalem, and Jews came in large numbers and found manuscripts of the Old Testament as well as other Hebrew books Driver went on, "Although there are not a few caves in the hills of this district, there cannot have been many, possibly not even two, containing considerable libraries, and the possibility cannot be excluded that this is the very cave of the recent discoveries, and that the scrolls now found are the residue left by the Jews on that previous occasion." (*Jewish Quarterly Review,* April, 1950, page 368) It is a view which Professor Rowley of Manchester also favored Once again one fairly catches his breath with astonishment. How the event anticipated that of 1947 and following years! Did crowds of devout Jews from Jerusalem actually throng to *our* cave, then leave it to be undisturbed through another thousand years until we in our time joined hands with the ages gone, impelled by almost the same Biblical interest as they? The answer has already been given in the brief sketch of subsequent archaeological survey of this region. So many "library" caves were found that we may say this was a common feature We cannot accept the tempting guess, but must look elsewhere for solution of the persisting mystery.

Over against theories of this sort, Professor Dupont-Sommer of the Sorbonne propounded and continued to defend a quite different interpretation of the archaeological evidence. The pots in which the manuscripts were preserved were common types And why should Jewish potters have suddenly changed their styles just because Romans had come to the land? Instead we deal here with a slow cultural interpenetration, in which Jewish pottery continued side by side with the newer techniques introduced from the West. Instead of demonstrating that the lower terminus must be the arrival of the Romans, with then a later unidentified and unauthorized visit, the meaning of the pottery of this first cave is single and harmonious. And it points to about the beginning of the Christian era, probably the first century A D. Then the cave was closed; and it remained undisturbed until 1947.

Whatever the cogency or the inadequacy of such variant deductions from the same archaeological facts, one thing became clear: these facts were insufficient to establish finality That further archaeological evidence presently became available has already been pointed out, we must examine its import in a moment. But now we turn instead to the light provided by the content of the scrolls. And we do so with quickened anticipation, for surely they must make some allusion to events of their time which then can be identified through our knowledge of Jewish history. It is clear, however, that all this relates only to the non-canonical materials; for the Biblical manuscripts contained, apart from textual variants, only what had been familiar through

all the centuries. The problem is highly complex, extensive, and intricate. Doubtless for many years debate will continue, and also scholars will succeed in uncovering fresh allusions or statements that reveal the date of the authors or of the scribes of the documents

Professor Zeitlin, in his repudiation of a high dating invoked the manuscript of Habakkuk, which was freely admitted to be a commentary. But, he argued, such Biblical interpretation belongs exclusively to a later time. But this also is not a conclusive consideration, for it is apparent that if presently other evidence were to demonstrate that this document really is pre-Christian, then the implication is the reverse of Zeitlin's view, Jewish commentaries originated in a higher antiquity than was formerly supposed.

Many other considerations of a comparable sort were put forward—and rightly, for certainly all this is relevant evidence, though much of it subject to the reply just now proposed The term "righteous teacher" is reminiscent of a famous document of the genizah finds (pages 27-28, 32) commonly known as "The Zadokite Fragment" Indeed in course of time the interrelations of the scrolls with this hitherto very strange work became more and more clear. The date and authorship of the Zadokite work were unknown; but some scholars claimed that it is not earlier than the Eighth century. A D. The common words for God (YHWH and *'adonay*), while used normally through the second commonwealth, do not occur here, but instead the short Hebrew word, *'el*. The Jews are not called *yehudim* but *yisrael,* contrary to the usage of the second commonwealth. Hosts of such minor points, words, phrases, forms of expression, ideas, modes of thought, allusions, calling for a familiarity with extracanonical and rabbinic literature, are the basis of the charge attributed to some Jewish scholars that Christian scholars do not know enough to deal properly with the scrolls. It must, indeed, be granted that first-class Talmudic scholarship is extremely rare among Christians.

The argument proceeded: the documents are of mediocre quality without style or distinction; it is certain they do not belong to the pre-Christian period. "If the orthography . . . and errors in use of the Hebrew language . . . reflect a period when it had ceased to live on the lips of those who used it, if the Aramaisms . . . are not otherwise recorded before Targum and Talmud, if some grammatical forms cannot be explained except as due to Arabic influence, the terminus a quo must be the early part of the 7th century A.D."

Prominent also was the debate about the *kittim*. In the Old Testament "the isles of *kittim*" means Cyprus, although in Daniel 11 30 the word refers quite clearly to the Roman world. Now in "The War of the Sons of Light with the Sons of Darkness," one of the manuscripts which Professor Sukenik acquired, there is mention of the *kittim* of Ashur and the *kittim* of Egypt But the Habakkuk commentary speaks simply of the *kittim*. Are

these the same? And in any case who are the *kittim,* since patently they are not the Cypriotes? Some scholars argued that Jewish expectations aroused by the First Crusade indicate that these Christian armies are the *kittim,* and thus the literary compositions are not earlier than the eleventh century A D. But many believe that the *kittim* of Egypt and of Ashur are the Ptolemaic and Seleucid dynasties which terminated, the Ptolemies of Egypt in 31 B C., and the Seleucids of Syria in 64 B C Further, Dupont-Sommer argues vigorously that the *kittim* of the Habakkuk commentary are not at all the same, from their character and conduct as deduced from the references to them, notably that "they sacrifice to their standards, and their very weapons of war are the objects of their worship," they can be none other than the Romans He seems to favor republican as against imperial Rome, a view that became explicit when he went on to identify the episode of "the Wicked Priest" and "the Teacher of Righteousness" with Pompey's capture of Jerusalem in 63 B.C. But Professor Rowley disputed this. For him, these figures and in addition "the house of Absalom," and the rest, can confidently be identified with familiar personages of the time of Antiochus Epiphanes and the Maccabean movement.

Appraise these views as one will, the fact is that the area was a battleground of scholarship, with a plethora of discordant views such as to defy present summary. From such uncertainty we go, with shaken hope, it is true, to the finds as physical objects—as archaeological materials, one might say. In the course of a thoughtful and cautious discussion that was frankly skeptical of the high antiquity claimed for the scrolls, Professor Driver suggested that chemical analysis of the ink used on the documents might throw light on their origins, since older Jewish inks were composed of soot mixed with oil and balsam gum, but from about A D 100 ink from a metallic base was known, and by the Talmudic age it was in common use Six months later he reported that the analysis had beeen conducted by a specialist in the British Museum; the ink was of the carbon variety, "unfortunately," he says, for such inks continued to be used even after the prevalence of metallic ink The result was completely indecisive.

About the same time the famous "carbon 14" test was invoked. The principle entailed is that all living organisms secrete this form of radioactive carbon, but at death the radioactivity begins a slow but uniform decrease at a rate that has been scientifically determined Thus measurement of residual radioactivity in organic matter is an index, not precise, yet dependable within reasonable limits, of the time elapsed since death occurred. Some pieces of linen from the first cave were thus examined at the University of Chicago, the test indicated that the flax had been pulled about 1917 years previously, this is, in A D 33, with a margin of uncertainty of some years one way or the other Now it is probable that the linen was woven within a few months of the destruction of the flax stalks. But linen is sometimes kept in a home

for a generation or more And did the guardians of the manuscripts deliberately choose old, hence cheaper, linen in which to wrap them? So the most that may be deduced with safety is that the manuscripts, if all deposited at one time, were put in the cave at some uncertain point between, say, the beginning of the Christian era and, perhaps, the end of the first century A.D. Professor Dupont-Sommer welcomed the result as support of his position. He holds the view, independently advanced in the first printing of the second edition of this present work, that the manuscripts were hidden in the cave at the time of impending peril for the Jewish nation, specifically during the great revolt against Rome in A.D. 66-70. Then, he believes, the cave was sealed and not again opened until 1947. But on this matter again we find no scholarly agreement, but a confusing diversity of opinions

So then we must invoke further archaeological evidence. Fortunately we possess some of very high relevance.

In the excavation of Khirbet Qumran, the ruins of the Essene monastery, there were found a couple of inscribed ostraca—more simply, potsherds. One of them contains nothing but the Hebrew alphabet, of which a few letters have been erased and rewritten. Clearly it is a pupil's trial copy, as he learned to write. In a rather awkward, elementary way it will then provide a model of the writing of the time. And its letters are just like those of the manuscripts of the nearby caves However, Essene occupation of the site extended over two centuries, the result is still vague But it is reasonable to assume that a worthless fragment of this sort, left behind when the building was abandoned by the sect, had been written not long before. If so, it provides a sample of Jewish writing of the third quarter of the first century A.D.

The Murabba'at caves also gave us something of importance. It has been mentioned that they were intermittently occupied from Chalcolithic times (approximately the fourth millennium B C) onward into the Christian era; indeed the latest remains are attributed to the thirteenth century. Materials from the Roman period are our present concern. Coins were discovered from the time of the procurators, from the reign of Agrippa I (A D. 41-44), and from that of Hadrian (117-138). Among the Greek documents was a marriage contract of the seventh year of Hadrian The occupation of the caves in the first and second centuries of our era is thus well attested. But it is the Hebrew documents that are especially notable and relevant. There were a number of copies of a single work that refers to "the deliverance of Israel through Simon ben Koseba, prince of Israel" This Simon is none other than Bar Kochba, the leader of the desperate revolt against Rome in A D 132-135, and it is believed that the documents are originals of his proclamation of independence; they were here preserved because this cave was apparently the center and stronghold of the movement. For with still more incredible bounty the cave gave us also two letters from Bar Kochba

himself to his general Yeshua ben Golgola. A third letter to Yeshua, sent by two underlings, reports among other concerns the movements of "the *goyyim* who fight against us"

We need not now dilate upon the astonishing circumstance that has given us such correspondence, nor delay over the alluring fact that David in his outlaw days had likewise his stronghold in a cave in the wild country of Judah. Instead the significance of this correspondence for our quest demands attention.

The course of investigation has again and again compelled discrimination between a fact and its interpretation (though in reality we never deal with pure fact; always there is some greater or less admixture of interpretation). And archaeological facts are no more than that such and such objects were discovered at such a time and under stated circumstances. All the rest is interpretation The first with which the archaeologist has to deal is the genuineness of the find and then its relation to its archaeological context. Other equally perplexing questions follow; and if the object is a document the problems are multiplied.

The Bar Kochba letters have strange features. Critics were quick to seize upon them; the charge of hoax was again heard. We repeat: all this was to the good; such possibilities must be examined But scholarship in general was convinced of the genuineness. In that case, here at last we secured just what the entire investigation has needed and for lack of which it has bogged down in contradictory theories. Here were dependable samples of Hebrew writing in Judea in the years A.D. 132-135 Now we have a fixed point, in fact two of them; for this serves to verify the Qumran ostracon. And from these points, with caution and full realization of individual idiosyncrasies of penmanship, the whole body of our now-considerable group of Hebrew documents can be arranged in approximately final sequence, and to some extent assigned dating.

Now the pieces begin to fall into place; the large outlines of the picture become clear, although small pieces still defy placing and there remain many blanks. But already the massiveness of our new knowledge overwhelms. It calls for a complete reconstruction of our ideas about the immediate background and the environment of the Christian movement.

Khirbet Qumran was the Essene monastery, the great headquarters of the sect. The manuscripts found in the caves of the region are Essene documents. We have already spoken of the astounding result, that our sources for the text of the Old Testament are thus carried back about a thousand years closer to their remote originals. Whether the caves were actual library caves, or were used by the sect for safekeeping of their precious documents in time of trouble—and probably both theories possess truth—the great matter is that they have preserved for us pre-Christian copies of large sections of the Scriptures Differing appraisals of the worth of these relevant

to the accepted massoretic text have been expressed—and again we can afford to be tolerant of both views—still it is not too much to say that textual criticism of the Old Testament has been revolutionized.

But this is only one aspect of our good fortune. The non-Biblical manuscripts also are Essene "The Habakkuk Commentary," the manuscript of psalms which Professor Sukenik reported, his "War of the Sons of Light with the Sons of Darkness," the justly famous "Manual of Discipline": they are all documents jealously guarded in antiquity, but now revealing to us the organization, the principles, and the religious meaning of Essenism; into them the accounts by Josephus, Philo, and Pliny now integrate, though overshadowed by these firsthand documents. The "Zadokite Fragment," so long a puzzle for scholars, is also Essene. And the nature of the sect, that emerges from these sources, is rich in astonishment Instead of considering, as formerly, the Essene movement an interesting but minor phase of Judaism at the beginning of Christian times, we must now recognize it as only in degree of lesser significance than the official Judaism of Jerusalem and the Temple. It was a movement of deep and austere personal piety. But as well, the remarkable contents of these documents of Essene faith and practice have led some scholars to claim that the sect must be identified as Jewish-Christian, an heir of the mother church of Jerusalem. Some on the other hand have entertained the speculation that John the Baptist was an Essene; others would even say the same about Jesus All three views and their like are extreme. But they illumine the real situation. There is a wealth of interrelations between these documents and the New Testament, there are similarities in the history and faith of the two movement; there is a kinship of spirit between them. Yet one was indubitably Jewish, the other Christian. The final comment is apparent Judaism in its deepest essence meant personal piety, witness the Book of Psalms which has stood through all these centuries as the great classic of the inner life. This essential urge gave birth to movements in which individuals found a ritual and way of life more congenial to their aspirations than the official cultus of Jerusalem. As one of these, and as heir of all that Judaism had created in this direction, Christianity came into being; and its literature likewise.

A FEW SUGGESTIONS FOR FURTHER READING

The articles by Burrows and Trever in *The Biblican Archaeologist* xi (1948) constitute in a sense the official announcement of the finds, although numerous brief notes had preceded. Succeeding issues of this journal should be consulted, as also of BASOR (*The Bulletin of the American Schools of Oriental Research*), *The Palestine Exploration Fund Quarterly, The Jewish Quarterly Review, The Expository Times, Vetus Testamentum.* A large number of other journals, scholarly or popular, have also published material

of varying significance The long article by Edmund Wilson in *The New Yorker* of May 14, 1955 (later published by Oxford) justly attracted wide interest.

Some complete texts were published in photographic reproduction, and transcription into familiar Hebrew, by Burrows, Trever, and Brownlee, *The Dear Sea Scrolls of St. Mark's Monastery I The Isaiah Manuscript and the Habakkuk Commentary*, 1950; *II Plates and Transcription of the Manual of Discipline*, 1951. New Haven A translation of the latter was published the same year by Brownlee· *The Dead Sea Manual of Discipline*. BASOR Supplementary Studies 10-12.

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APART from texts of the Bible and its versions, this brief bibliography is limited, in the main, to works in English. A few foreign titles have been included where they are of special importance. Periodical literature is also restricted, it contains such an immense bulk of relevant material as to dictate the policy of admitting only a few articles that are peculiarly pertinent. The purpose is merely to offer a useful, introductory bibliography, comprehensiveness lies far beyond

Within the four major sections of the bibliography a further grouping of titles by their subject matter will be observed; such groups are then arranged alphabetically, according to authors. It should be noted that several works are relevant to topics subsequent to that with which they are mentioned.

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